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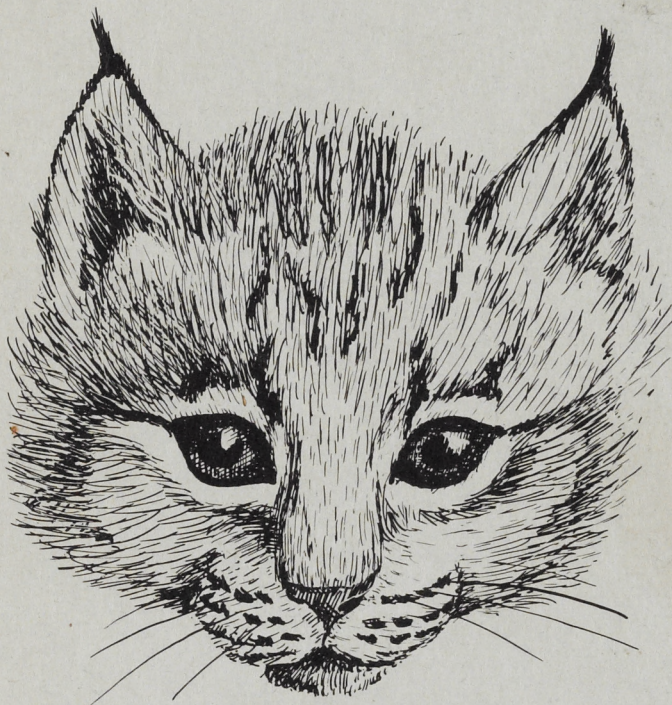


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Guide to Saskatchewan Mammals

by

W. H. BECK



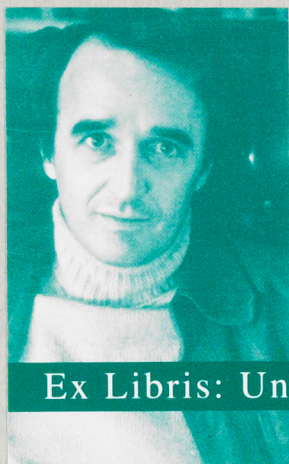
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Education is the progressive discovery of our own ignorance.

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A Guide To Saskatchewan Mammals

By W. H. BECK

Department of Biology, University of Saskatchewan, Saskatoon.

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Cover sketch Lynx kit, by F. W. LAHRMAN.

Introduction

There has never been an extensive survey of the mammals of Saskatchewan and as a result the published literature is scanty and widely scattered.

In 1944, W. A. Fuller prepared *An Annotated List of the Mammals of Saskatchewan* in which he listed 96 forms, of which ten were hypothetical. The present paper is an extension and revision of his list, with the addition of keys and descriptive material. It lists 105 forms, of which six are hypothetical, three exterminated, and one existing only in enclosed preserves and parks.

In preparing this account the works of others have been used extensively. In most cases the source and authority have been stated. The classification is from Anderson's *Catalogue of Canadian Recent Mammals* (1946) and Miller and Kellogg's *List of North American Recent Mammals* (1955). With the exception of the orders Insectivora and Artiodactyla, the dentition is that given by Anthony in *Field Book of North American Mammals* (1928). This work has also been the source of descriptions and ranges of various species, as were Burt and Grossen-

heider's *A Field Guide to the Mammals* (1952), and Palmer's *The Mammal Guide* (1954). A. L. Rand's *Mammals of the Eastern Rockies and Western Plains of Canada* (1948) has been a constant source of information and inspiration.

The writer would like to express his appreciation to Dr. R. L. Peterson of the Royal Ontario Museum for critical assistance with the manuscript and for identifying specimens from the localities marked with an asterisk; and to Dr. R. W. Nero of the Saskatchewan Museum of Natural History, Dr. G. F. Ledingham of Regina College, and Dr. D. S. Rawson of the University of Saskatchewan for their valuable assistance and encouragement. Considerable information on the distribution and abundance of game species and furbearers was contributed by T. A. Harper, Wildlife Branch, Department of Natural Resources, Regina.

Grateful acknowledgment is made to the following institutions for making available their records: Royal Ontario Museum (ROM), Saskatchewan Museum of Natural History (SMNH), and University of Saskatchewan (U. of S.).

The Area

The province of Saskatchewan extends from the International Boundary in the south (latitude 49°) to the District of Mackenzie, Northwest Territories, in the north (latitude 60°), a distance of 750 miles; and from the Manitoba border on the east (roughly longitude 102°) to the Alberta border on the west (longitude 110°). It covers an area of 251,700 square miles.

The Canadian Shield extends over the northern third of the province. This is a region abundantly watered by lakes and rivers, and of generally low relief. The southern two-thirds lies in the Western Interior Lowlands Region where the surface is comparatively level, though gently rolling. In the southwest corner are the Cypress Hills with elevations up to 4,000 feet above sea level.

The main drainage systems are directed east toward Hudson Bay, in conformity to the slope of the region. The two larger river systems are the Saskatchewan and the Churchill. The Saskatchewan has two great branches which arise in the Rocky Mountains. The Churchill River drains a great part of the northern forest, and has its source in central Alberta. The northern one-fifth of the province drains into Lake Athabasca and the Mackenzie River system which empties into the Arctic Ocean. Wollaston Lake drains both to the north and to the east. The southeastern section is drained by the Qu'Appelle River, running eastward to Lake Winnipeg. The Frenchman River, arising in the Cypress Hills empties into the Gulf of Mexico via the Missouri River.

Life Zones in Saskatchewan

The nature of habitats has an important bearing on the range of mammals. For this reason a brief consideration of the Life Zones of Saskatchewan is included. The boundaries of the zones listed are not definite, nor do all authorities agree upon them.

Hudsonian Life Zone: In the north-east corner, covering approximately one-fifth of the province, is the Hudsonian Zone. This is an area of scrub forests, stunted trees, mostly coniferous, and scattered dwarf willows and poplars. Here the barren ground caribou meets the larger woodland caribou.

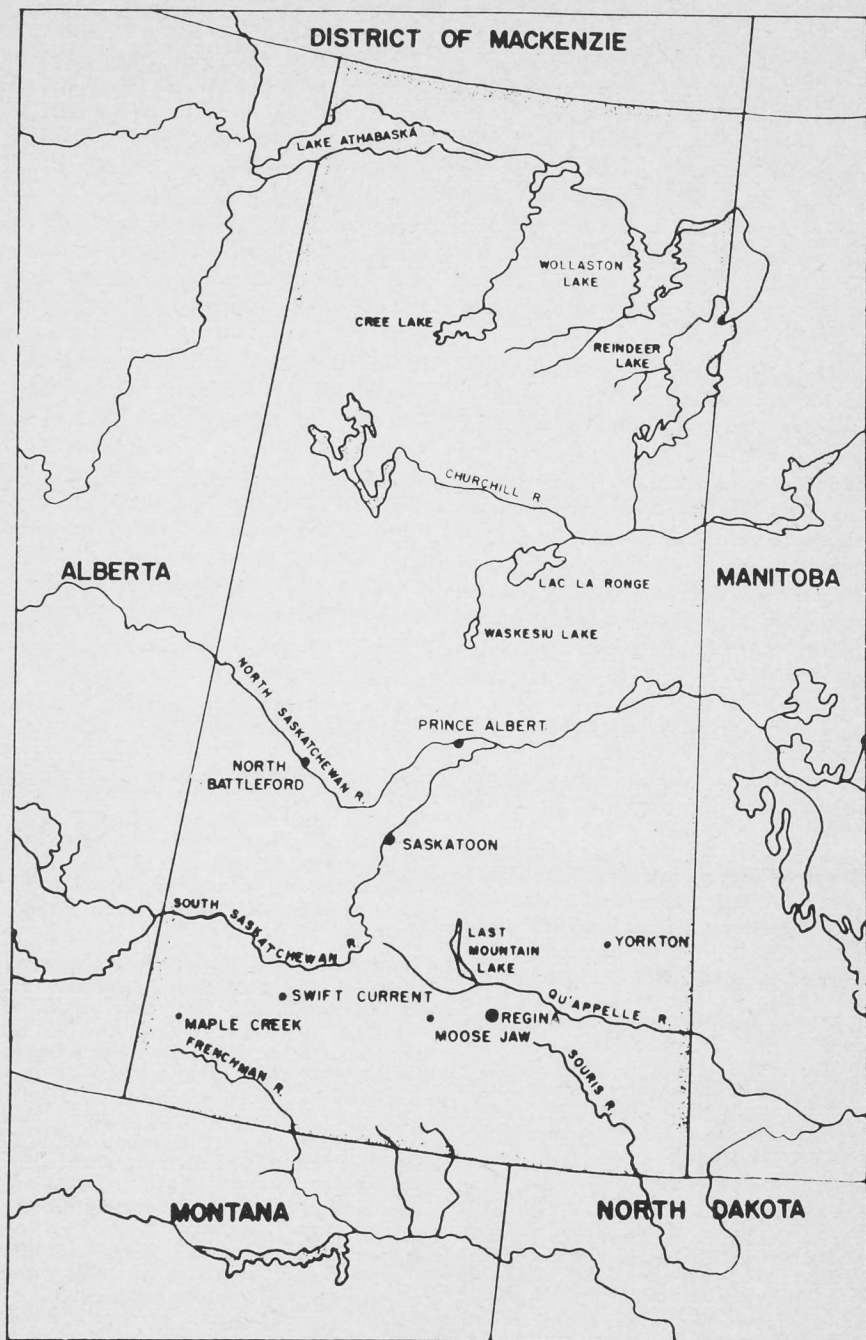
Canadian Life Zone: The large central part of the province, more than one-third of the area, is included in the Canadian Zone. Most of the Northern Coniferous Forest is in this area, and also the northern part of

the Aspen-Grove Region. The Northern Coniferous Forest is the most heavily and uniformly forested part of Canada, with white spruce the most common tree. The dominant mammals are moose, woodland caribou, marten, porcupine, and snowshoe rabbit.

Transition Life Zone: The southern third of the province comprises the Transition Zone. This zone includes most of the Aspen-Grove and all of the Grassland Region. The Aspen-Grove Region is also known as the Park Belt. Here patches of forest alternate with areas of grass. The dominant tree is the aspen poplar. The Grassland Section towards the southwest has scattered islands of aspen groves, but the predominant vegetation is several species of grasses. The bison, jack rabbit, coyote and Richardson ground squirrel are characteristic of this zone.

REFERENCES:

- ANDERSON, R. M.: Faunas of Canada, Canada Year Book 1937, pp. 33-42.
SHELFORD, V. E. (editor): Naturalist's Guide to the Americas, Williams and Wilkins Co., 1926, pp. 258-262.



Check-List of the Mammals of Saskatchewan

ORDER INSECTIVORA

Family Soricidae — shrews		subspecies
1. <i>Sorex cinereus</i>	Masked Shrew	2
2. <i>Sorex arcticus</i>	Arctic Shrew	1
3. <i>Sorex vagrans</i>	Wandering Shrew	2
4. <i>Sorex palustris</i>	Water Shrew	1
5. <i>Microsorex hoyi</i>	Pygmy Shrew	1+1*
6. <i>Blarina brevicauda</i>	Short-tailed Shrew	1

ORDER CHIROPTERA

Family Vespertilionidae — bats		
1. <i>Myotis lucifugus</i>	Little Brown Myotis	1
2. <i>Myotis keenii</i>	Keen's Myotis	1
3. <i>Myotis evotis</i>	Long-eared Myotis	1*
4. <i>Myotis subulatus</i>	Small-footed Myotis	1
5. <i>Lasionycteris noctivagans</i>	Silver-haired Bat	
6. <i>Eptesicus fuscus</i>	Big Brown Bat	2
7. <i>Lasiurus borealis</i>	Red Bat	1
8. <i>Lasiurus cinereus</i>	Hoary Bat	

ORDER CARNIVORA

Family Procyonidae — raccoons		
1. <i>Procyon lotor</i>	Raccoon	1

Family Ursidae — bears		
1. <i>Euarctos americanus</i>	Black bear	1
2. <i>Ursus horribilis</i>	Grizzly Bear	1

Family Canidae — foxes and wolves		
1. <i>Vulpes vulpes</i>	Red Fox	2
2. <i>Vulpes velox</i>	Swift Fox	1
3. <i>Alopex lagopus</i>	Arctic Fox	1
4. <i>Canis latrans</i>	Coyote	2
5. <i>Canis lupus</i>	Gray Wolf	2

Family Mustelidae — weasels, otters, skunks, etc.		
1. <i>Martes americana</i>	Marten	1
2. <i>Martes pennanti</i>	Fisher	2
3. <i>Mustela erminea</i>	Ermine	1
4. <i>Mustela rixosa</i>	Least Weasel	1
5. <i>Mustela frenata</i>	Long-tailed Weasel	1
6. <i>Mustela vison</i>	Mink	1
7. <i>Mustela nigripes</i>	Black-footed Ferret	
8. <i>Gulo luscus</i>	Wolverine	1
9. <i>Lutra canadensis</i>	River Otter	1
10. <i>Mephitis mephitis</i>	Striped Skunk	1
11. <i>Taxidea taxus</i>	Badger	1

Family Felidae — cats		
1. <i>Felis concolor</i>	Mountain Lion	1
2. <i>Lynx canadensis</i>	Lynx	1
3. <i>Lynx rufus</i>	Bobcat	1

ORDER LAGOMORPHA

Family Leporidae — hares and rabbits		
1. <i>Lepus townsendii</i>	White-tailed Jack Rabbit	1
2. <i>Lepus americanus</i>	Snowshoe Rabbit	2
3. <i>Sylvilagus floridanus</i>	Eastern Cottontail	1
4. <i>Sylvilagus nuttallii</i>	Nuttall's Cottontail	1

ORDER RODENTIA

Family Sciuridae — squirrels		Subspecies
1. <i>Marmota monax</i>	Woodchuck	1
2. <i>Citellus richardsonii</i>	Richardson's Ground Squirrel	1
3. <i>Citellus tridecemlineatus</i>	Thirteen-lined Ground Squirrel	3
4. <i>Citellus franklinii</i>	Franklin's Ground Squirrel	
5. <i>Cynomys ludovicianus</i>	Black-tailed Prairie Dog	1
6. <i>Eutamias minimus</i>	Least Chipmunk	1+2*
7. <i>Tamiasciurus hudsonicus</i>	Red Squirrel	2
8. <i>Sciurus carolinensis</i>	Gray Squirrel	1
9. <i>Glaucomys sabrinus</i>	Northern Flying Squirrel	2
Family Geomyidae — pocket gophers		
1. <i>Thomomys talpoides</i>	Northern Pocket Gopher	3
Family Heteromyidae — pocket mice and rats		
1. <i>Perognathus fasciatus</i>	Olive-backed Pocket Mouse	1
2. <i>Dipodomys ordii</i>	Ord's Kangaroo Rat	1
Family Castoridae — beavers		
1. <i>Castor canadensis</i>	Beaver	2
Family Cricetidae — common native mice, rats, and voles		
1. <i>Onychomys leucogaster</i>	Northern Grasshopper Mouse	1
2. <i>Peromyscus maniculatus</i>	Deer Mouse	2
3. <i>Peromyscus leucopus</i>	White-footed Mouse	1
4. <i>Neotoma cinerea</i>	Bushy-tailed Wood Rat	1
5. <i>Synaptomys borealis</i>	Northern Bog Lemming	2
6. <i>Phenacomys ungava</i>	Heather Vole	2
7. <i>Clethrionomys gapperi</i>	Gapper's Red-backed Mouse	2
8. <i>Microtus pennsylvanicus</i>	Meadow Vole	2
9. <i>Pedomys ochrogaster</i>	Prairie Vole	1
10. <i>Lagurus curtatus</i>	Sagebrush Vole	1
11. <i>Ondatra zibethicus</i>	Muskrat	2+1*
Family Muridae — introduced old world rats and mice		
1. <i>Rattus norvegicus</i>	Norway Rat	
2. <i>Mus musculus</i>	House Mouse	1
Family Zapodidae — jumping mice		
1. <i>Zapus hudsonius</i>	Meadow Jumping Mouse	1+1*
2. <i>Zapus princeps</i>	Western Jumping Mouse	1
Family Erethizontidae — new world porcupines		
1. <i>Erethizon dorsatum</i>	Porcupine	3

ORDER ARTIODACTYLA

Family Cervidae — deer		
1. <i>Cervus canadensis</i>	Elk; Wapiti	1
2. <i>Odocoileus hemionus</i>	Mule Deer	1
3. <i>Odocoileus virginianus</i>	White-tailed Deer	1
4. <i>Alces alces</i>	Moose	1
5. <i>Rangifer arcticus</i>	Barren Ground Caribou	1
6. <i>Rangifer caribou</i>	Woodland Caribou	1
Family Antilocapridae — pronghorns		
1. <i>Antilocapra americana</i>	Pronghorn	1
Family Bovidae — cattle, etc.		
1. <i>Bison bison</i>	Bison	1

* hypothetical

Key to Orders of Saskatchewan Mammals

- 1. Flying mammals Chiroptera
Non-flying mammals 2
- 2. Feet with hooves Artiodactyla
Feet without hooves 3
- 3. Canines absent 4
Canines present 5
- 4. One pair of incisors in upper jaw Rodentia
Two pairs of incisors in upper jaw Lagomorpha
- 5. Canines small Insectivora
Canines prominent Carnivora

Order: INSECTIVORA

Family 1: SORICIDAE

Body rather slender; neck distinct; snout elongate; eyes small, bead-like; external ears small, sometimes almost concealed in the soft, silky fur; size very small, among the smallest of mammals; feed mainly on insects; nocturnal in habit.

Key to Saskatchewan Genera of SORICIDAE

- 1. Tail much shorter than head *Blarina*
Tail much longer than head 2
- 2. Three unicuspid teeth in upper jaw visible from side view (Fig. 1) *Microsorex*
More than three unicuspid teeth in upper jaw visible from side view (Fig. 2) *Sorex*

Genus: *Sorex* Linnaeus.

Dentition: I 3/1, C 1/1, PM 3/1, M 3/3 = 32.

Key to Saskatchewan Species of *Sorex* (Adapted from Rand, 1948)

- 1. Total length 140 mm., or more; hind foot with fringe of hairs *S. palustris*
Total length 120 mm. or less; hind foot without fringe of hairs 2
- 2. Pattern tricolored; back darkest, sides paler, belly palest 3
Pattern bicolored, back and sides about same color 4
- 3. Total length over 105 mm. *S. arcticus*
Total length less than 100 mm. *S. cinereus*-adults
- 4. Third unicuspid tooth smaller than fourth (Fig. 3) *S. vagrans*
Third unicuspid tooth equal to or larger than fourth (Fig. 2) *S. cinereus* - juveniles & subadults

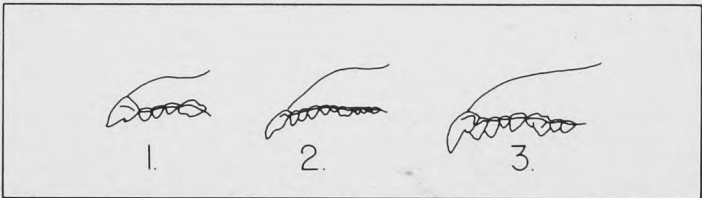


FIG. 1: Skull of *Microsorex hoyi*, lateral view; FIG. 2: Skull of *Sorex cinereus*, lateral view; FIG. 3: Skull of *Sorex vagrans*, lateral view.

1—*Sorex cinereus* Kerr**Masked Shrew.**

Two subspecies are recognizable in Saskatchewan:

a) *Sorex cinereus cinereus* Kerr

Found in northern and central Saskatchewan.

Total length, 90-95 mm.; tail vertebrae, 35-39 mm.; hind foot, 11-12 mm.; upperparts grayish-brown to brownish-gray; sides paler than back. Adults may develop a distinct dark dorsal band.

Reported from Prince Albert National Park (Soper '52; ROM); Buffalo Narrows*, Livelong, Maidstone*, Reindeer Lake*, Revenue*, Saskatoon*, Waskesiu*, Wollaston Lake* (U. of S.).



● *Sorex cinereus cinereus*

△ *Sorex cinereus haydeni*

and northern parts of the province.

Saskatchewan specimens are referable to *Sorex arcticus arcticus* Kerr.

Total length, 105-118 mm.; tail vertebrae, 36-42 mm.; hind foot, 13-14 mm.; color above rich dark brown or brownish-black; sides pale red-brown; belly grayish.

Reported from Emma Lake (Banfield '41; ROM); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Torch River (SMNH); Buffalo Narrows*, Naimcam*, Pierce Lake, Lac la Ronge* (U. of S.).



● *Sorex arcticus*

3—*Sorex vagrans* Baird**Wandering Shrew.**

Specimens previously classified as *Sorex obscurus soperi* should, according to Findley (1955), be classified as *Sorex vagrans obscurus* in the southwest, and *Sorex vagrans soperi* in the central to southeastern part of the province.

Total length, 105-112 mm.; tail vertebrae, 43-47 mm.; hind foot, 11.5-13 mm.; upperparts dull sepia brown; underparts pale gray.

a) *Sorex vagrans obscurus* Merriam.

Specimens of *S. o. soperi* reported from the following locations are probably of this subspecies: Cypress Hills (Anderson and Rand '45; Banfield '41; Soper '46; ROM; U. of S.);

b) *Sorex cinereus haydeni* Baird
Found in central and southern Saskatchewan.

Total length, 80-86 mm.; tail vertebrae, 25-32 mm.; hind foot, 9.5-11 mm.; smaller than typical *cinereus* with shorter tail; sides usually distinctly paler than back in adults.

Reported from Cypress Hills (Banfield '41; ROM); Indian Head, Lake Katepwa (ROM); Regina (ROM; U. of S.); St. Victor*, Saskatoon* (U. of S.).

2—*Sorex arcticus* Kerr**Arctic Shrew.**

Occurs in small number in central



- *Sorex vagrans obscurus*
 △ *Sorex vagrans soperi*

Govenlock (Soper '46); Middle Creek (Anderson and Rand '45; Soper '46).

b) *Sorex vagrans soperi* Anderson and Rand.

Specimens of *S. o. soperi* reported from Prince Albert National Park (Soper '46, '52) are probably of this subspecies.

4—*Sorex palustris* Richardson
Water Shrew.

Reported only from the north-central part of the province.

Saskatchewan specimens are referable to *Sorex palustris palustris* Richardson.

Total length, 151-160 mm.; tail vertebrae, 65-72 mm.; hind foot, 19-20 mm.; upperparts brownish-black; underparts gray; hind feet fringed with hair for swimming.

Reported from Prince Albert National Park (Soper '52); Wollaston Lake* (U. of S.).

Genus: *Microsorex* Coues.

Dentition: I 3/1, C 1/1, PM 3/1, M 3/3 = 32.

5—*Microsorex hoyi* (Baird)
Pygmy Shrew.

Extremely rare in Saskatchewan.

Total length, 80-85 mm.; tail vertebrae, 27-30 mm.; hind foot, 9-10.5 mm.; upperparts brownish; underparts grayish.

Only one subspecies has been reported from the province, but it is probable that another occurs in the south.



- *Microsorex hoyi*

a) *Microsorex hoyi hoyi* (Baird).

Found in southern Alberta and southern Manitoba, so presumably occurs in southern Saskatchewan.

b) *Microsorex hoyi intervectus* Jackson.

Reported from Madge Lake (SMNH); Fond-du-lac*, High Hill, Indian Head*, Swanson (U. of S.).

Genus: *Blarina* Gray.

Dentition: I 3/1, C 1/1, PM 3/1, M 3/3 = 32.

6—*Blarina brevicauda* (Say)
Short-tailed Shrew.

Rare throughout central and southern Saskatchewan.

Saskatchewan specimens are referable to *Blarina brevicauda manitobensis* Anderson.



Short-Tailed Shrew

Photo by R. W. Fyfe
Sask. Museum of Natural History

Total length, 106-125 mm.; tail vertebrae, 25-26 mm.; hind foot, 14-16 mm.; color dark brown; external ears not visible.

Reported from Abernethy (Ba[r]-ker '47; SMNH); Fort Qu'Appelle, Regina (Nero '56c; SMNH); Grenfell (Anderson '47; Nero '57b); Pun-nichy (Nero '57b; SMNH); Wakaw (Nero 57e; SMNH); Porcupine Plain (SMNH); Gerald, Somme (U. of S.).



● *Blarina brevicauda*
△ *Sorex palustris*

Order: CHIROPTERA

Family 1: VESPERTILIONIDAE

Mostly small to medium-sized bats; tragus prominent; tail long and either entirely or almost entirely enclosed in the interfemoral membrane.

Key to Saskatchewan Genera of VESPERTILIONIDAE

- 1. One upper incisor on each side (Fig. 4); color red or brown frosted with white *Lasiurus*
Two upper incisors on each side (Fig. 5); color brown or black 2
- 2. Three upper premolars on each side (Fig. 5) *Myotis*
Less than three upper premolars on each side (Figs. 6 and 7) 3
- 3. Two upper premolars on each side (Fig. 6); color black with white-tipped hairs *Lasionycteris*
One upper premolar on each side (Fig. 7); color pale uniform brown above; paler to whitish below *Eptesicus*

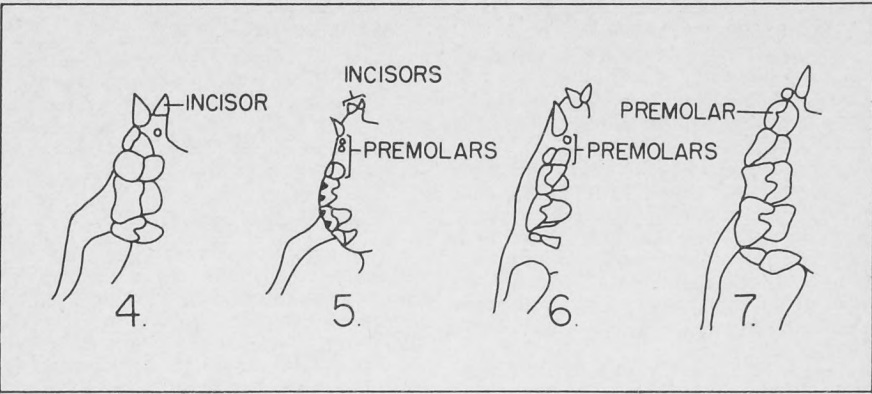


FIG. 4: Right upper teeth of *Lasiurus borealis*, ventral view; FIG. 5: Right upper teeth of *Myotis lucifugus*, ventral view; FIG. 6: Right upper teeth of *Lasionycteris noctivagans*, ventral view; FIG. 7: Right upper teeth of *Eptesicus fuscus*, ventral view.

Genus: *Myotis* Kaup.

Dentition: I 2/3, C 1/1, PM 3/3, M 3/3 = 38.

Key to Saskatchewan Species of *Myotis*

- 1. Ears large, when laid forward reaching 4 mm. or more beyond nostril 2
- Ears moderate, when laid forward reaching less than 2 mm. beyond nostril 3
- 2 Free border of interfemoral membrane with a noticeable fringe of stiff hairs; ears reaching 5-7 mm. beyond nostril *M. evotis*
- Free border of interfemoral membrane with inconspicuous, scattered, stiff hairs; ears reaching 4 mm. beyond nostril *M. keenii*
- 3. With a definite keel on calcar (Fig. 8); distinct black mask across face *M. subulatus*
- With no keel or calcar (Fig. 9) *M. lucifugus*

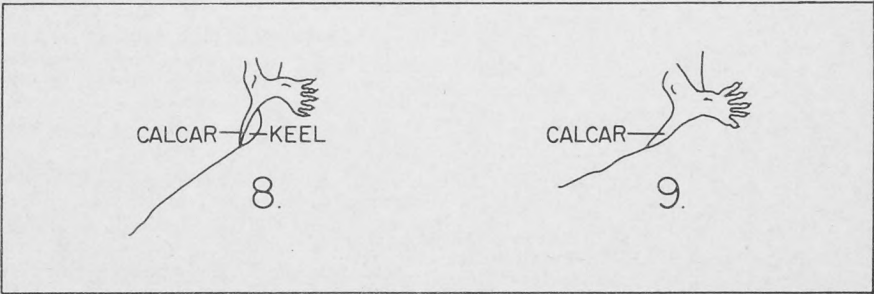


FIG. 8: Right hind foot and part of interfemoral membrane of *Myotis subulatus*, showing keel on calcar; FIG. 9: Right hind foot and part of interfemoral membrane of *Myotis lucifugus*, showing calcar without keel.

1—*Myotis lucifugus* (LeConte)**Little Brown Myotis.**

Appears to be province-wide in distribution.

Saskatchewan specimens are referable to *Myotis lucifugus lucifugus* (LeConte).

Total length, 85-100 mm.; tail vertebrae, 30-41 mm.; hind foot, 9-13 mm.; color above brown, below paler to buff; "at the shoulder there is a small contrasting area of darker, nearly blackish-brown, forming an ill-defined spot; ears and membranes blackish-brown" (Miller and Allen, 1928).

Reported from Cypress Hills (Banfield '41); Waskesiu (Soper '52); Estevan, Oxbow, Piapot, Regina (SMNH); Buffalo Narrows*, Crackingstone Point on Lake Athabasca, Lac la Ronge* (U. of S.).



● *Myotis lucifugus*

△ *Myotis subulatus*

2—*Myotis keenii* (Merriam)**Keen's Myotis.**

Only one specimen has been reported in Saskatchewan. It was collected at Buffalo Narrows* in 1953 (Novakowski '56). It is referable to *Myotis keenii septentrionalis* (Trouessart).

Total length, 91 mm.; tail vertebrae, 39 mm.; hind foot, 9.5 mm.; color yellowish-brown above, lighter chamois color below; ears brown.

3—*Myotis evotis* (Allen)**Long-eared Myotis.**

Not yet reported from Saskatchewan, but known to occur just south of the international border so may be found in the province. Specimens would probably be referable to *Myotis evotis evotis* (Allen).

4—*Myotis subulatus* (Say)**Small-footed Myotis.**

The first recorded specimen for Saskatchewan was collected in the South Saskatchewan River valley north of Stewart Valley, on July 12, 1958, by the Saskatchewan Museum of Natural History. It is referable to *Myotis subulatus subulatus* (Say).

Total length, 78-79 mm.; tail vertebrae, 35-42 mm.; hind foot, 7-8 mm.; fur yellowish at tips; distinct black mask across face.

Genus: *Lasionycteris* Peters.

Dentition: I 2/3, C 1/1, PM 2/3, M 3/3 = 36.

5—*Lasionycteris noctivagans* (LeConte) **Silver-haired Bat.**

Silver-haired Bat in Flight

Photo by R. W. Fyfe
Sask. Museum of Natural History

Appears to be province-wide in distribution.

Total length, 88-98 mm.; tail vertebrae, 37-42 mm.; hind foot, 8-11 mm.; color blackish-brown; fur tipped with white.

No subspecies recognizable.

Reported from Dundurn (Banfield '41; ROM); Govenlock (Rand '43b); Esterhazy, Flotten Lake, Ituna, Langbank, L wvan, Prelate, Qu'Appelle,

Sheho, Swift Current, Tullis, Yorkton (Nero '57a); Craven, Cupar, Glenavon, Mortlach, Outlook, Regina, Tregarva, Wilcox (Nero '57a; SMNH); Birmingham, Kamsack, Spirit Lake (Nero '57c; SMNH); Buffalo Narrows*, Frobisher Lake, Indian Head (U. of S.)



● *Lasionycteris noctivagans*

Genus: *Eptesicus* Rafinesque.
Dentition: I 2/3, C 1/1, PM 1/2, M 3/3 = 32.

6—*Eptesicus fuscus* (Beauvois)
Big Brown Bat.

Two subspecies are known to occur in the province:

a) *Eptesicus fuscus fuscus* (Beauvois).

Total length, 96-117 mm.; tail vertebrae, 34-48 mm.; hind foot, 10-13 mm.; upperparts uniform brown; underparts somewhat paler brown.

Two specimens were taken by Fuller at Estevan* (U. of S.); one from Regina* (SMNH).

b) *Eptesicus fuscus pallidus* Young.
Fairly common in parts of central and southern Saskatchewan.
Total length, 105-118 mm.; tail vertebrae, 36-50 mm.; hind foot, 10-13 mm.; paler and slightly larger than typical *fuscus*.



● *Eptesicus fuscus*
△ *Myotis keenii*

Reported from Estevan, Regina, Tregarva (SMNH); Saskatoon* (U. of S.).
Genus: *Lasiurus* Gray.
Dentition: I 1/3, C 1/1, PM 2/2, M 3/3 = 32..

7—*Lasiurus borealis* (Müller)
Red Bat.

Rare throughout most of the province.

Saskatchewan specimens are referable to *Lasiurus borealis borealis* (Müller).

Total length, 105-115 mm.; tail vertebrae, 40-45 mm.; hind foot, 6-9 mm.; males rusty-red frosted with white, females dull buffy-chestnut with less frosting.

Key to Saskatchewan Species of *Lasiurus*

- Color dark brown, heavily frosted with white; total length 120 mm. or more *L. cinereus*
- Color bright reddish-brown; total length 115 mm. or less *L. borealis*



● *Lasiurus borealis*

Reported from Last Mountain Lake (Rand '43b); Touchwood Hills (Hollis '02); Expanse, Moose Jaw, Tregarva (SMNH); Regina (ROM; SMNH; U. of S.); Reindeer Lake*, Saskatoon (U. of S.).

8—*Lasiurus cinereus* (Beauvois)
Hoary Bat.

Reasonably frequent throughout the province.



● *Lasiurus cinereus*

Total length, 126-150 mm.; tail vertebrae, 48-65 mm.; hind foot, 13-18 mm.; color dark brown to yellowish-brown, overcast with white. A broad yellow band under the throat is distinctive.

Reported from Carlton, Emma Lake (Banfield '41); Shaunavon (Rand '43b); Touchwood Hills (Hollis '02); Regina, Simpson (SMNH); Pascal (U. of S.).

Order: CARNIVORA

Key to Families of CARNIVORA

- | | |
|--|-------------|
| 1. Claws not retractile | 2 |
| Claws more or less retractile | 4 |
| 2. Five functional toes on each foot | 3 |
| Forefoot with four functional toes and one rudimentary toe; hind foot with four toes | Canidae |
| 3. Tail rudimentary | Ursidae |
| Tail moderate, marked with dark-colored rings..... | Procyonidae |
| 4. Five functional toes on each foot | Mustelidae |
| Forefoot with four functional toes and one rudimentary toe; hind foot with four toes | Felidae |

Family 1: PROCYONIDAE

Body of small or medium size; stout and bear-like; tail long and bushy, annulated.

Genus: *Procyon* Storr.

Dentition: I 3/3, C 1/1, PM 4/4, M 2/2 = 40.

1—*Procyon lotor* (Linnaeus)
Raccoon.

The range of the raccoon was previously believed to extend only into the southern part of the province. Records of specimens in the north suggests a more extensive range.

Saskatchewan specimens are referable to *Procyon lotor hirtus* Nelson and Goldman.



● *Procyon lotor*

Reported from Estevan (Soper '46); Regina (Anderson '47); Carlyle, Disley, Kelstern, Meadow Lake, Moose Mountain, North Portal, Vantage, Wauchope (SMNH).



● *Euarctos americanus*

Family 2: URSIDAE

Size large to very large, largest of carnivorous mammals; body thick and heavy; tail short.

Genus: *Euarctos* Gray.

Dentition: I 3/3, C 1/1, PM 4/4, M 2/3 = 42.

1—*Euarctos americanus* Pallas.

Black Bear.

Fairly well distributed in the wooded north-central parts of the province.

Saskatchewan specimens are referable to *Euarctos americanus americanus* Pallas.

Reported from Emma Lake (Banfield '41); Prince Albert National Park (Banfield '41; Soper '52); Candle Lake, Fort a la Corne, Hudson Bay, Mistatim (SMNH).

Genus: *Ursus* Linnaeus.

Dentition: I 3/3, C 1/1, PM 4/4, M 2/3 = 42.

2—*Ursus horribilis* Ord.

Grizzly Bear.

Probably extirpated at present, but once roamed the plains region of southwestern Saskatchewan. *Ursus horribilis horribilis* Ord is the form that occurred.

Skulls have been found near Maple Creek and Shaunavon (Anderson '47).

Family 3: CANIDAE

Body slender; legs long; head elongate.

Genus: *Vulpes* Oken.

Dentition: I 3/3, C 1/1, PM 4/4, M 2/3 = 42.

1—*Vulpes vulpes* Linnaeus.

Red Fox.

Saskatchewan specimens are referable to *Vulpes vulpes regalis* Merriam in the southeast, and *Vulpes vulpes abietorum* Merriam in the central and northern parts. There are few or no individuals in the southwest portion.

Reported from Harper Lake, Stony Rapids, Waterfound River, Windrum Lake (Churcher '57); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Crean Lake, Jackfish Lake, Trout River (ROM); Kennedy Lake, Lampman, Lang, Pense, Red Earth (SMNH).

2—*Vulpes velox* (Say)

Swift Fox.

Almost exterminated in Canada, but a few may still occur in the southwestern part of the province.

Saskatchewan specimens are referable to *Vulpes velox hebes* Merriam.



● *Vulpes vulpes*

The Saskatchewan Museum of Natural History has a specimen taken at Ravenscrag in 1927, and the Royal Ontario Museum has a specimen taken at Govenlock in 1928.

Genus: *Alopex* Kaup.

Dentition: I 3/3, C 1/1, PM 4/4, M 2/3 = 42.



● *Alopex lagopus*
 △ *Canis lupus*

3—*Alopex lagopus* (Linnaeus) **Arctic Fox.**

Found in the northern part of the province.

The Saskatchewan Museum of Natural History has a specimen taken at Reindeer Lake, referable to *Alopex lagopus innuitus* (Merriam).

Genus: *Canis* Linnaeus.

Dentition: I 3/3, C 1/1, PM 4/4, M 2/3 = 42.

4—*Canis latrans* (Say) **Coyote.**

Two subspecies occur in the province:

a) *Canis latrans latrans* Say.

Occurs on the plains of southern Saskatchewan.



● *Canis latrans latrans*

△ *Canis latrans thamnus*

Reported from Big Muddy Lake, Morgan Creek, Rocky Creek, Val Marie (Soper '46); Neidpath (Banfield '41); Cypress Hills, Govenlock, Indian Head, Maple Creek (ROM).

b) *Canis latrans thamnus* Jackson.

Occurs in "east-central Saskatchewan, south of lat. 54° N., and north of lat. 51° N." (Miller and Kellogg '55).

Reported from Prince Albert National Park (Soper '52, listed as *C. l. latrans*; ROM); Etomani, Melfort (ROM).

5—*Canis lupus* Linnaeus.**Gray Wolf.**

Two subspecies have been reported in the province:

- a) *Canis lupus griseoalbus*
Baird.

Type locality is Cumberland House. Occurs throughout the forested northern regions, south to about Carlton.

Reported from Prince Albert National Park as *C. l. knightii* (Anderson '43; Banfield '41; Soper '52).

- b) *Canis lupus nubilus* Say.

Formerly common in southern Saskatchewan. Now probably extinct.

Family 4: MUSTELIDAE

Body long and slender; legs short; anal scent glands usually present.

Key to Saskatchewan Sub-families of MUSTELIDAE

1. Toes completely webbedLutrinae
Toes not webbed, or but slightly so2
 2. Claws short, partly retractile3
Claws usually long, not retractile4
 3. Feet digitigrade; body slenderMustelinae
Feet semiplantigrade; body stoutGuloninae
 4. Color black with white markings on backMephitinae
Color above grizzled grey; sides of head whiteTaxidiinae
- Sub-family 1: Mustelinae (Martens, Fishers, Weasels, Minks).

Key to Saskatchewan Genera and Species of MUSTELINAE
(Adapted from Rand, 1948)

1. Body white below (may also be white above)2
Body mostly brownish below5
2. Feet black; black mask across face*Mustela nigripes*
Not as above3
3. Tail with black tip; length not less than 275 mm.4
No black tip to tail; length not over 200 mm.*Mustela rixosa*
4. Length over 350 mm.; white line down inside of
hind leg*Mustela frenata*
Length less than 350 mm.; no white line on hind
leg*Mustela erminea*
5. Total length over 800 mm.*Martes pennanti*
Total length less than 700 mm.6
6. Ears large; pale buff to orange patch on throat
and breast*Martes americana*
Ears small; white patch on chin*Mustela vison*

Genus: Martes Pinel.

Dentition: I 3/3, C 1/1, PM 4/4,
M 1/2 = 38.

- 1—*Martes americana* (Turton)
Marten.

Saskatchewan specimens are referable to *Martes americana abieticola* (Preble).

The type locality of this subspecies is Cumberland House. Numerous marten are trapped each year in the Pasquia and Porcupine Hills.

Reported from Red Earth (SMNH).

- 2—*Martes pennanti* (Erxleben)
Fisher.

Reported from Carrot River, Connel Creek, Crackingstone Creek, Hazelcliffe, Prince Albert, Red Earth Indian Reserve (SMNH).

- a) *Martes pennanti columbiana*
Goldman.

Rare, overtrapping has almost led to the extinction of this species.

In northern Saskatchewan it intergrades with *M. p. pennanti* (Erxleben).

Soper (1952) reports a fisher trail seen in Prince Albert National Park, the only sign observed in the park for a long period of time.

- b) *Martes pennanti pennanti*
(Erxleben).



● *Martes pennanti*

Occurs as an intergrade with *M. p. columbiana* Goldman.

Genus: *Mustela* Linnaeus.

Dentition: I 3/3, C 1/1, PM 3/3, M 1/2 = 34.

3—*Mustela erminea* Linnaeus.
Ermine.



● *Mustela erminea*

Saskatchewan specimens are referable to *Mustela erminea richardsonii* Bonaparte.

Total length, 200-340 mm.; tail vertebrae, 60-100 mm.; hind foot, 25-42 mm.; color in winter all white with a black tip to tail; color in summer uniform brown above, white below, tail tipped with black.

Reported from Cypress Hills (Soper '46, listed as *M. e. invicta*); Dollard, Shaunavon (Anderson '47, listed as *M. e. invicta*); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02, listed as *M. ciconanii ciconanii*); Archive



● *Mustela rixosa*

(ROM); Indian Head (ROM; U. of S.); Buffalo Narrows*, Emma Lake (U. of S.).

4—*Mustela rixosa* (Bangs)
Least Weasel.

Saskatchewan specimens are referable to *Mustela rixosa rixosa* (Bangs).

Type locality is Osler. Fairly common in southern Saskatchewan and probably widespread but not abundant in the rest of the province.

Total length, 167-230 mm.; tail vertebrae, 24-45 mm.; hind foot, 19.1-30.5 mm. (Soper '46); color in winter all white; color in summer brown above, white below; differs from the preceding species in that the tail has no black tip, although it may have a few black hairs.

Reported from Eastend (Soper '46); Atwater, Baidon, Dysart, Macoun, Marieton, Grand Coulee, North Portal, Regina, Samburg, Skull Creek, Willows (SMNH); Archive (ROM); Beaver Creek, Reynaud, Strongfield, Tuxford, Warman (U. of S.).

5—*Mustela frenata* Lichtenstein.

Long-tailed Weasel.

Saskatchewan specimens are referable to *Mustela frenata longicauda* Bonaparte.

Type locality of this species is Cumberland House. It is widespread, but nowhere abundant, in central and southern Saskatchewan.

Total length, 425-465 mm.; tail vertebrae, 139-170 mm.; hind foot, 51-57 mm. (Soper '46); color in winter all white; in summer pale uniform brown above, yellowish below; tail tipped with black both summer and winter.



● *Mustela frenata*

Reported from Saskatoon (Banfield '41; U. of S.); Touchwood Hills (Hollis '02); Val Marie (Soper '46); Archive, Govenlock, Indian Head, Maple Creek (ROM); Craven, Fort Qu'Appelle, Govan, Pilot Butte, Punichy, Regina, Wood Mountain (SMNH); Coronach, Estevan, Outram, Rockglen (U. of S.).

6—*Mustela vison* Schreber **Mink.**

Province-wide in distribution, and

most abundant in the northern part of the province.

Saskatchewan specimens are referable to *Mustela vison lacustris* (Preble).

Total length, 560 mm.; tail vertebrae, 190 mm.; hind foot, 67 mm. (Rand '48); color above and below dark brown, with a white area on throat.



● *Mustela vison*

Reported from Battle Creek (Soper '46); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Boggy Creek, Condie, Esterhazy, Regina (SMNH); Maple Creek (ROM).

7—*Mustela nigripes* (Audubon and Bachman) **Black-footed Ferret.**

Occurs in southwestern Saskatchewan.

No subspecies recognizable.

Total length, 512 mm.; tail vertebrae, 120 mm.; hind foot, 58 mm. (Rand '48); color above yellowish-white with the centre of back brownish; mask across eyes, feet, legs, and tip of tail black; underparts white.

Reported from Expanse, Grayburn (Soper '46); Climax, Hazlet, Gergovia, Regina (Soper '46; SMNH); Senate, Shaunavon, South Fork, Wood Mountain (Anderson '47); Big Beaver, Frontier (Anderson '47; SMNH); Maple Creek (ROM); Dunkirk, Keeler (SMNH).



● *Mustela nigripes*

Sub-family 2: Guloninae
(Wolverines)

Genus: *Gulo* Pallas.

Dentition: I 3/3, C 1/1, PM 4/4,
M 1/2 = 38.

8—*Gulo luscus* (Linnaeus)

Wolverine.

Common in the area north and east of Stoney Rapids and Fond-du-Lac. The range extends down to



● *Gulo luscus*
△ *Martes americana*

Wollaston Lake south and east from Lake Athabasca. A specimen in the Saskatchewan Museum of Natural History was taken at Prince Albert. It is referable to *Gulo luscus luscus* (Linnaeus).

Total length, 900-1000 mm.; tail vertebrae, 170-215 mm.; hind foot, 160-180 mm.; color dark brown; two yellowish stripes extend along the sides from the shoulder to base of tail.

Sub-family 3: Lutrinae (Otters)
Genus: *Lutra* Brisson.

Dentition: I 3/3, C 1/1, PM 4/3,
M 1/2 = 36.

9—*Lutra canadensis* (Schreber)
River Otter.

Saskatchewan specimens are referable to *Lutra canadensis preblei* Goldman.

At one time, probably province-wide, now extremely rare. Occurs in the northern part of the province.

Total length, 950-1180 mm.; tail vertebrae, 300-430 mm.; hind foot, 130-138 mm.; pelage a rich brown above with a silvery sheen below, and on throat and muzzle; feet webbed; tail thick at base and tapered to the tip.



● *Lutra canadensis*

Reported from Foster Lakes, Mudjatik River, Wollaston Lake, (SMNH). Soper (1952) reported it

as being rare in Prince Albert National Park.

Sub-family 4: Mephitinae (Skunks)

Genus: *Mephitis* Geoffroy and Cuvier.

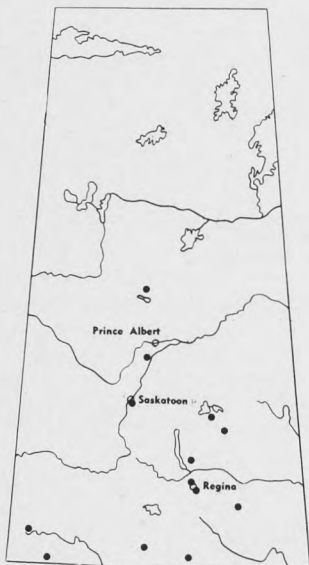
Dentition: I 3/3, C 1/1, PM 3/3, M 1/2 = 34.

10—*Mephitis mephitis* (Schreber)
Striped Skunk.

Saskatchewan specimens are referable to *Mephitis mephitis hudsonica* (Richardson).

The type locality of this species is the plains of Saskatchewan. It is an abundant and widespread species.

Total length, 660-666 mm.; tail vertebrae, 205-250 mm.; hind foot, 87-88 mm.; color black with a white patch on nape and from this, extending down each side of the back, a white stripe.



● *Mephitis mephitis*

Reported from Big Muddy Lake, along Souris River, Cypress Hills, Wood Mountain (Soper '46); Divide (Banfield '41); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Gibbs, Glenavon, Regina, Roddick, Tregarva, Wynyard (SMNH); Saskatoon (U. of S.).

Sub-family 5: Taxidiinae
(American Badgers)

Genus: *Taxidea* Waterhouse.

Dentition: I 3/3, C 1/1, PM 3/3, M 1/2 = 34.

11—*Taxidea taxus* (Schreber)
Badger.

Fairly well distributed over the Great Plains region of the province north to Prince Albert National Park.

Saskatchewan specimens are referable to *Taxidea taxus taxus* (Schreber).

Total length, 668-880 mm.; tail vertebrae, 123-150 mm.; hind foot, 110-114 mm.; color above grizzled gray; muzzle to top of head brown or blackish divided by a median white stripe that continues back to shoulders; sides of head white; foreclaws elongated for digging.



● *Taxidea taxus*

Reported from Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Govenlock, Maple Creek (ROM); Adams, Alpha, Condie, Keystown, Piapot, Regina (SMNH).

Fuller (1944) reports seeing numerous burrows in the southern part of the province, and one individual near Climax. The writer has seen one specimen in the vicinity of Kindersley.

Family 5: FELIDAE

Size medium to large; head rounded; claws long, sharp, and retractile.

Genus: *Felis* Linnaeus.

Dentition: I 3/3, C 1/1, PM 3/2, M 1/1 = 30.

1—*Felis concolor* Kerr.**Mountain Lion.**

Occasional stragglers reported in the province. A specimen in the Saskatchewan Museum of Natural History was taken at Connel Creek. It is referable to *Felis concolor missoulensis* Goldman.

Genus: *Lynx* Kerr.

Dentition: I 3/3, C 1/1, PM 2/2, M 1/1 = 28.



● *Lynx canadensis*

2—*Lynx canadensis* Kerr **Lynx.**

Found in the wooded parts of the province.

The form that occurs in Saskatchewan is *Lynx canadensis canadensis* Kerr.

Soper (1952) reports its occurrence in Prince Albert National Park. It is also reported from Bladworth, Candle Lake, Connel Creek, Foster Lakes, Prince Albert, Regina (SMNH).



● *Lynx rufus*

▲ *Felis concolor*

3—*Lynx rufus* (Schreber) **Bobcat.**

Rare in southwestern Saskatchewan, where specimens are referable to *Lynx rufus pallescens* Merriam.

Reported from Whitewood (Soper '46); Bench, Maple Creek (SMNH).

Order: LAGOMORPHA

Family 1: LEPORIDAE

Forelegs short, with five toes; hind legs elongate, with four toes; ears large to very large; tail short; upper lip divided.

Key to Saskatchewan Genera of LEPORIDAE

Total length over 400 mm.; hind foot over 105 mm.

long *Lepus*

Total length under 400 mm.; hind foot less than

100 mm. long *Sylvilagus*

Genus: *Lepus* Linnaeus.

Dentition: I 2/1, C 0/0, PM 3/2, M 3/3 = 28.

Key to Saskatchewan Species of *Lepus*

- Total length over 500 mm.; ear from notch over 90 mm. *L. townsendii*
- Total length less than 500 mm.; ear from notch less than 70 mm. *L. americanus*

1—*Lepus townsendii* Bachman.
White-tailed Jack Rabbit.

It is widely distributed in the province, but most abundant in the south and central parts.

Saskatchewan specimens are referable to *Lepus townsendii campanius* Hollister. The type locality of this species is the plains of Saskatchewan, probably near Carlton House.



● *Lepus townsendii*

Total length, 500-620 mm.; tail vertebrae, 60-100 mm.; hind foot, 130-150 mm.; color white in winter; in summer yellowish- or greyish-brown above, white below.

Reported from Big Muddy Lake, Val Marie (Soper '46); Prince Albert National Park (Soper '52); Indian Head (ROM); Bulyea, Craven, Dafoe, Harptree, Pilot Butte, Regina, Tregarva, Valeport (SMNH); Rose-town (U. of S.).

2—*Lepus americanus* Erxleben.
Snowshoe Rabbit.

Two subspecies have been reported from Saskatchewan:

a) *Lepus americanus americanus* Erxleben.

Common in the wooded areas of the province, it is almost province-wide in its range.

Total length, 340-480 mm.; tail vertebrae, 21-27 mm.; hind foot, 105-130 mm.; color in winter white, except for dusky-tipped ears; in summer grizzled brownish above, white below.

Reported from Emma Lake (Banfield '41); Battle Creek, Val Marie (Soper '46); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Paswegin (ROM); Saskatoon (ROM; U. of S.); Prince Albert* (SMNH; U. of S.); Bredin, Craven, Marchwell, Punnichy, Qu'Appelle Valley, Regina, Regina Beach, Tregarva (SMNH); Carlyle Lake*; Wollaston Lake* (U. of S.).



● *Lepus americanus americanus*
△ *Lepus americanus phaeonotus*

b) *Lepus americanus phaeonotus* Allen.

Rare in southeastern Saskatchewan.

Total length, 370-463 mm.; tail vertebrae, 25-48 mm.; hind foot, 105-125 mm. (Soper '46); resembles typical *americanus*, but paler and more buffy in summer pelage.

Reported from Glen Ewen (Soper '46). A specimen in the Saskatchewan Museum of Natural History taken at Estevan is probably *phae-onotus*.

Genus: *Sylvilagus* Gray.

Dentition: I 2/1, C 0/0, PM 3/2, M 3/3 = 28.

3—*Sylvilagus floridanus* (Allen)
Eastern Cottontail.

Saskatchewan specimens are referable to *Sylvilagus floridanus similis* Nelson.

Total length, 408 mm.; tail vertebrae, 52 mm.; hind foot, 99 mm. (Anderson '40); a white cottony tail is its most distinguishing characteristic.

According to Anderson and Rand (1943a) "there is little reason to doubt that this is the form recently reported from parts of southeastern Saskatchewan." The Saskatchewan Museum of Natural History has two specimens taken at Estevan.

4—*Sylvilagus nuttallii* (Bachman)
Nuttall's Cottontail.

Found in the dry regions of southwestern Saskatchewan, where specimens are referable to *Sylvilagus nuttallii grangeri* (Allen).

Total length, 315-429 mm.; tail vertebrae, 33-69 mm.; hind foot, 82-100 mm.; upperparts creamy-buff lightly grizzled with grayish or brownish; back and sides of lower

part of hind legs varying from rather dark rusty-cinnamon to a pale rusty-cinnamon, shading into pale rusty along outside of hind feet. A considerably smaller animal than the Eastern Cottontail.



● *Sylvilagus nuttallii*
△ *Sylvilagus floridanus*

Reported from Big Muddy Lake, Eastend (Anderson '40, '47; Soper '46); Val Marie (Anderson '40, '47; Soper '46; SMNH); Cypress Hills (Anderson '40, '47; Banfield '41; SMNH); Dundurn (Banfield '41); Dollard, Shaunavon (Anderson '40; SMNH); Frenchman River, Lonesome Butte (Anderson '47); Govenlock, Rocky Creek (Soper '46); Sceptre (SMNH).

Order: RODENTIA

Key to Saskatchewan Families of RODENTIA

1. Fur-lined cheek-pouches opening outside mouth
(Fig. 10)

2. No cheek-pouches present

2. Forefeet with digging claws

Forefeet not with digging claws

3. Tail naked, scaly and flattened, size large (about
1 mètre long)

Tail not as above; size not over 850 mm. long

4. Pelage of upper parts largely of quills

No quills in the fur

5. Hind legs greatly elongated; tail longer than
head and body

Hind legs not greatly elongated; tail as long as,
or shorter than head and body

6. Skull with post-orbital processes on frontal bones
(Fig. 11)

Skull lacking post-orbital processes on frontal
bones

7. Molars with tubercles arranged in three longi-
tudinal rows (Fig. 12)

Molars with tubercles arranged in two longi-
tudinal rows (Fig. 13), or with flattened
surface and not tuberculate (Fig. 14)
- 2

3

Geomyidae

Heteromyidae

Castoridae

4

Erethizontidae

5

Zapodidae

6

Sciuridae

7

Muridae

Cricetidae

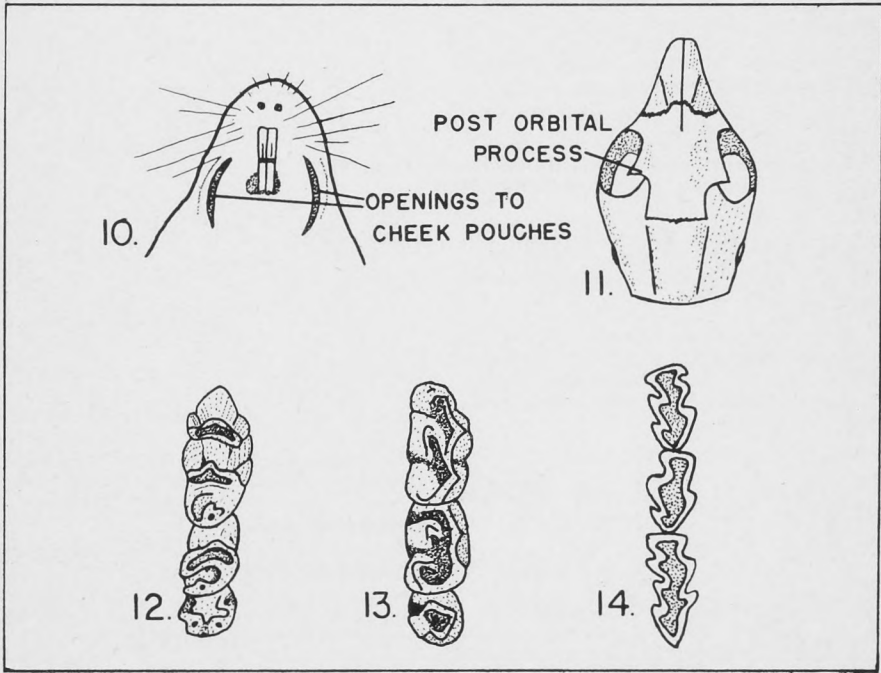


FIG. 10: Head of Pocket Gopher showing openings to cheek-pouches; FIG. 11: Skull of *Tamiasciurus hudsonicus*, dorsal view; FIG. 12: Right upper molars of *Mus musculus*, ventral view; FIG. 13: Right upper molars of *Peromyscus maniculatus*, ventral view; FIG. 14: Right upper molars of *Clethrionomys gapperi*, ventral view.

Family 1: SCIURIDAE

Size small to fairly large; tail usually long and bushy.

Key to Saskatchewan Genera of SCIURIDAE

- 1. Sides of body with furred gliding membrane *Glaucomys*
Sides of body without gliding membrane 2
- 2. Body slender and graceful; tail long 3
Body stout and heavy; tail short 4
- 3. Cheek-pouches present; tail moderate 5
Cheek-pouches absent; tail very long 6
- 4. Length 390 mm. or less; tail tipped with black *Cynomys*
Length 480 mm. or more; tail same color as back *Marmota*
- 5. Thumb with well-developed nail; with five dark
and four light stripes on dorsal surface *Eutamias*
Thumb with rudimentary nail; color not as above *Citellus*
- 6. Anterior border of orbit ventrally opposite last
premolar; upperparts reddish-brown *Tamiasciurus*
Anterior border of orbit ventrally opposite first
molar; upperparts gray or blackish *Sciurus*

Genus: *Marmota* Blumenbach.

Dentition: I 1/1, C 0/0, PM 2/1,
M 3/3 = 22.

1—*Marmota monax* (Linnaeus)
Woodchuck.

Rare on open prairies, fairly com-
mon in wooded areas.

Saskatchewan specimens are refer-
able to *Marmota monax canadensis*
(Erxleben).

Total length, 480-485 mm.; tail
vertebrae, 102-119 mm.; hind foot,
70-85 mm.; color reddish-brown
frosted with white.

Reported from Moose Mountain
(Soper '46); Prince Albert National
Park (Soper '52); Carievale, Madge
Lake (SMNH); Carlyle Lake, Ros-
thern (U. of S.).

Genus: *Citellus* Oken.

Dentition: I 1/1, C 0/0, PM 2/1,
M 3/3 = 22.



● *Marmota monax*

Key to Saskatchewan Species of *Citellus*

- 1. Head grizzled gray; back olive-brown with irre-
gular barring *C. franklinii*
Not as above 2
- 2. Color above rich brownish-black with six yellow-
ish longitudinal stripes alternating with rows
of yellow spots *C. tridecemlineatus*
Color-above pale grayish-brown, lightly grizzled
with black *C. richardsonii*

2—*Citellus richardsonii* (Sabine) Richardson's Ground Squirrel.

Citellus richardsonii richardsonii (Sabine) is the local form. The type locality is Carlton House. This is the familiar "gopher" of the prairies. It is abundant on the open prairies and extends as far north as Prince Albert National Park.

Total length, 260-325 mm.; tail vertebrae, 60-80 mm.; hind foot, 43-48 mm.; color above generally pale grayish-brown, lightly grizzled with blackish on the back; underparts and feet chiefly whitish.



● *Citellus richardsonii*

Reported from Prairie Dog Buttes, Rocky Creek, Val Marie (Soper '46); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Carlyle, Craven, Elbourne, Herbert, Horizon, Hungry Hollow, Lorie, Merryflat, Milestone, Prince Albert, Regina, Saltcoats, Silton, Southey, Tregarva, Valeport, Wilcox, Wrixon (SMNH); Carlton House, Dundurn, Indian Head, Pilot Butte, Watson (ROM); Cavalier, Estevan, Ladder Lake, Landis, Saskatoon (U. of S.).

3—*Citellus tridecemlineatus* (Mitchill) Thirteen-lined Ground Squirrel.

This rodent is neither as abundant nor as widespread as the preceding.



Thirteen-lined Ground Squirrel

Photo by R. W. Fyfe
Sask. Museum of Natural History

Total length, 250-295 mm.; tail vertebrae, 80-105 mm.; hind foot, 35-40 mm.; color as in key.

Three subspecies are recognizable in Saskatchewan. Specimens in the Saskatchewan Museum of Natural History and the University of Saskatchewan have not been determined subspecifically, but the species is reported from Craven, Glenavon, Kedleston, Mortlach, Pilot Butte, Tregarva, Valeport (SMNH); Ceylon, Estevan, Lang*, Saskatoon (U. of S.).

a) *Citellus tridecemlineatus tridecemlineatus* (Mitchill).

Occurs in southeastern Saskatchewan.



● *Citellus tridecemlineatus*

Reported from Estevan (Soper '46; ROM); Oxbow (Soper '46); Touchwood Hills (Hollis '02); Broadview, Dundurn, Indian Head, Lake Katepwa (ROM).

b) *Citellus tridecemlineatus hoodii* (Sabine).

Type locality is Carlton House. Occurs farther north, on the edge of the forests in central Saskatchewan.

Reported from Prince Albert National Park (Soper '52); Carlton House, Emma Lake (ROM).

c) *Citellus tridecemlineatus pallidus* (Allen).

A paler race found in the drier parts of southwestern Saskatchewan.

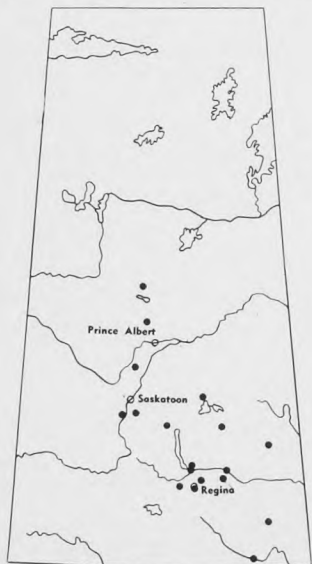
Reported from Cypress Hills (Soper '46; ROM).

4—*Citellus franklinii* (Sabine)
Franklin's Ground Squirrel.

Widespread, but most abundant in the bushy regions. It is commonly known as the "bush gopher" or "gray gopher." The type locality is in the vicinity of Carlton House.

Total length, 310-402 mm.; tail vertebrae, 116-150 mm.; hind foot, 50-55 mm. (Banfield '41); top of head and neck black and gray grizzled, remainder rich olive-brown with rather conspicuous irregular barring; underparts and feet gray.

No subspecies has been recognized.



● *Citellus franklinii*

Reported from Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Carlton House, Dundurn, Emma Lake, Indian Head, Lake Katepwa, Rokeby, Watson (ROM); Craven, Hungry Hollow, Pilot Butte, Regina, Roche Percée, Simpson, Valeport (SMNH); Carlyle Lake (SMNH; U. of S.); Pike Lake (U. of S.).

Genus: *Cynomys* Rafinesque.

Dentition: I 1/1, C 0/0, PM 2/1, M 3/3 = 22.

5—*Cynomys ludovicianus* (Ord)
Black-tailed Prairie Dog.



Black-tailed Prairie Dog

Photo by F. W. Lahrman
Sask. Museum of Natural History

Occurs in the valley of the Frenchman River and related drainages east of Val Marie. At the present time there are eleven or more distinct colonies in this area all within a 20 mile radius, the centre of which is 20 miles southeast of Val Marie.

Cynomys ludovicianus ludovicianus (Ord) is the local form.

Total length, 275-390 mm.; tail vertebrae, 72-80 mm.; hind foot, 52-65 mm.; color rather uniform pale pinkish-brown with a conspicuous black tip to the end of the tail.

Genus: *Eutamias* Trouessart.

Dentition: I 1/1, C 0/0, PM 2/1, M 3/3 = 22.

5 — *Eutamias minimus* (Bachman)
Least Chipmunk.

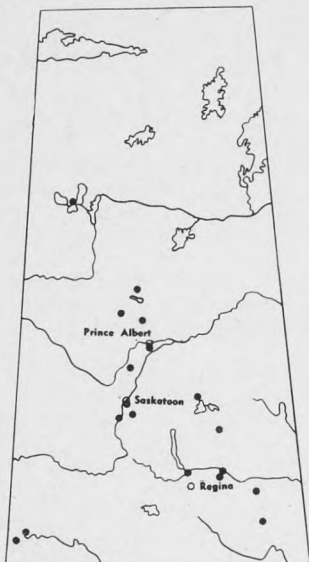
Found in timbered and bushy country over most of the southern and central parts of the province.

One subspecies has been reported from the province and two others may occur:

a) *Eutamias minimus borealis* (Allen).

Total length, 197-225 mm.; tail vertebrae, 88-105 mm.; hind foot, 31-

33 mm.; top of head grizzled brown and gray, blackish line through eye, a whitish line above and below eye; back with five black longitudinal stripes separated by four grayish ones; shoulders and flanks reddish-brown; rump grizzled gray and black; belly grayish-white.



● *Eutamias minimus*

Reported from Battle Creek (Anderson and Rand '43d); Carlton, Emma Lake (Banfield '41; ROM); Cypress Hills, Moose Mountain (Soper '46); Dundurn (Banfield '41); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Broadview, Craven, Indian Head, Lake Katepwa, Prince Albert, Qu'Appelle Valley, Watson (ROM); Ladder Lake*, Pike Lake, Saskatoon* (U. of S.).

b) *Eutamias minimus pallidus* (Allen).

"Rare and local in most parts of southern Saskatchewan on account of scarcity of bushy cover" (Anderson, 1947).

A pale form.

c) *Eutamias minimus hudsonius* Anderson and Rand.

"Probably occurs in northeastern Saskatchewan (Miller and Kellog, 1955).

Genus: *Tamiasciurus* Trouessart.

Dentition: I 1/1, C 0/0, PM 2/1, M 3/3 = 22.

7—*Tamiasciurus hudsonicus* (Erxleben) **Red Squirrel.**

This species is confined to the forest areas and is prevalent throughout the province where habitat is suitable.

Total length, 320-331 mm.; tail vertebrae, 127-137 mm.; hind foot, 43-53 mm.; color above bright reddish-brown; lightly grizzled with black; a black flank stripe on each side; belly white.

Most of the specimens in the Saskatchewan Museum of Natural History and the University of Saskatchewan have not been determined subspecifically. They have been collected at Arborfield, Bannock, Craven, Fort a la Corne, Fort Qu'Appelle, Kamsack, Madge Lake, Mossyvale, Mountain Cabin, Moscow, Nipawin, Otonabee, Pasquia Hills, Watapi Lake (SMNH); Carlyle Lake*, Fond-du-Lac, Reindeer Lake*, Wollaston Lake* (U. of S.).

Two subspecies have been reported for the province:

a) *Tamiasciurus hudsonicus hudsonicus* (Erxleben).

This form probably intergrades with *preblei* in the northern part of the province.

b) *Tamiasciurus hudsonicus preblei* Howell.



● *Tamiasciurus hudsonicus*

Reported from Prince Albert National Park (Soper '52); Buffalo Narrows* (U. of S.).

Genus: *Sciurus* Linnaeus.

Dentition: I 1/1, C 0/0, PM 2/1, M 3/3 = 22.

8—*Sciurus carolinensis* Gmelin.

Gray Squirrel.

Probably introduced since it has only recently been noted in the province — some distance from its previously known range.

Total length, 430-520 mm.; tail vertebrae, 210-248 mm.; hind foot, 55-75 mm.; dark gray above, paler beneath, with a rusty wash on back, face and hind legs; a melanistic phase occurs that is almost jet black, and is popularly known as the "black squirrel."

Reported from near Strasbourg (Nero, '58a), Esterhazy (SMNH), Rose Valley (Nero '58b) and the city of Saskatoon.

Genus: *Glaucomys* Thomas.

Dentition: I 1/1, C 0/0, PM 2/1, M 3/3 = 22.



● *Sciurus carolinensis*

△ *Glaucomys sabrinus*

9—*Glaucomys sabrinus* (Shaw)
Northern Flying Squirrel.

Two subspecies have been reported for the province:

a) *Glaucomys sabrinus sabrinus* (Shaw).

Fairly common in the wooded areas of northern Saskatchewan.

Total length, 303-322 mm.; tail vertebrae, 132-149 mm.; hind foot, 39-42 mm.; color above grayish- or cinnamon-brown with slaty-colored under fur; underparts grayish-white with slaty base to hairs.

Reported from Emma Lake (Banfield '41; ROM); Prince Albert National Park (Soper '52); Buffalo Narrows* (U. of S.).

b) *Glaucomys sabrinus canescens* Howell.

"Indians have assured me that flying squirrels, which are presumably *canescens*, inhabit Moose Mountain, Saskatchewan" (Soper, 1946).

Slightly smaller than typical *sabrinus*; upperparts pale pinkish-cinnamon, underparts soiled white.

Family 2: GEOMYIDAE

Robust in form, with short legs; forefeet adapted for digging; a pair of fur-lined cheek-pouches opens on the cheeks at sides of mouth; ears and eyes small.

Genus: *Thomomys* Wied.

Dentition: I 1/1, C 0/0, PM 1/1, M 3/3 = 20.

1—*Thomomys talpoides* (Richardson) **Northern Pocket Gopher.**



Northern Pocket Gopher

Photo by R. W. Fyle
Sask. Museum of Natural History

Fairly common in certain areas of the province, where they are known

locally as "moles" because of their burrowing habits.

Specimens in the Saskatchewan Museum of Natural History which have not been determined subspecifically, have been collected at Amsterdam, Craven, Cypress Hills, Earl Grey, Eastend, Elburne, Gibbs, Madge Lake, Mortlach, Pilot Butte, Regina, Valeport and Wauchope.



● *Thomomys talpoides*

Three subspecies are recognizable in the province:

- a) *Thomomys talpoides talpoides* (Richardson).

Type locality is near Carlton House. Ranges through central Saskatchewan north to Prince Albert National Park.

Total length, 214-216 mm.; tail vertebrae, 60-62 mm.; hind foot, 28 mm.; upperparts dull grayish-brown; underparts buffy to dirty whitish-gray.

Reported from Indian Head (Anderson '47; ROM); Moose Jaw, Yorkton (Anderson '47); Prince Albert National Park (Anderson '47; Soper '52); Touchwood Hills (Hollis '02); Dundurn, Regina (ROM).

- b) *Thomomys talpoides bullatus* Bailey.

Rare in southwestern Saskatchewan, where it apparently intergrades with *andersoni*, a form found in Alberta.

Brighter in color than typical *talpoides*, but like it in size.

Reported from Cypress Hills, Dollard, Eastend, Ravenscrag (Soper '46).

- c) *Thomomys talpoides rufescens* Wied.

Larger and darker than typical *talpoides*. Total length, 220-242 mm.; tail vertebrae, 63-70 mm.; hind foot, 29-32 mm.

Reported from Glen Ewen (Anderson '47; Soper '46); Redberry Lake, Saskatoon, Spy Hill (U. of S.).

Family 3: HETEROMYIDAE

Small slender rodents; a pair of fur-lined cheek-pouches opens on the cheeks at side of mouth; eyes and ears usually large; tail generally as long as head and body, or longer.

Key to Saskatchewan Genera of HETEROMYIDAE

Length 135 mm. or less *Perognathus*

Length 260 mm. or more *Dipodomys*

Genus: *Perognathus* Wied.

Dentition: I 1/1, C 0/0, PM 1/1, M 3/3 = 20.

1—*Perognathus fasciatus* Wied.

Olive-backed Pocket Mouse.



Olive-backed Pocket Mouse

Photo by R. W. Fyfe
Sask. Museum of Natural History

Occurs in the southern part of the province, where specimens are referable to *Perognathus fasciatus fasciatus* Wied.

Total length, 125-143 mm.; tail vertebrae, 57-67 mm.; hind foot, 16.3-18 mm. (Soper '46); color above olive-gray with a yellow wash on sides; underparts white; yellow spots on ears.



● *Perognathus fasciatus*

Reported from Sceptre (Nero and Fyfe '56; SMNH); Baildon, Dundurn, Grandora, Imperial, Mortlach, Piapot, Moon Lake, Regina Beach, Skull Creek, Swanson, east and west sides of River at Elbow, Quantock (SMNH); See Nero, '57d).

Genus: *Dipodomys* Gray.

Dentition: I 1/1, C 0/0, PM 1/1, M 3/3 = 20.



● *Dipodomys ordii*

2—*Dipodomys ordii* Woodhouse.
Ord's Kangaroo Rat.

Occurs in southwestern Saskatchewan, where specimens are referable to *Dipodomys ordii terrosus* Hoffmeister.

Total length, 266-282 mm.; tail vertebrae, 143-157 mm.; hind foot, 43-44 mm.; upperparts tawny to reddish-brown; underparts and stripe across each flank white; tail long and tufted.

Reported from Portreeve (Nero '56a; SMNH); Sceptre (Nero and Fyfe '56; SMNH); Shackleton, Tompkins (Anderson '47; SMNH); Piapot (SMNH).

Family 4: CASTORIDAE

Large stout rodents; tail large, flattened and scaly; hind feet webbed.

Genus: *Castor* Linnaeus.

Dentition: I 1/1, C 0/0, PM 1/1, M 3/3 = 20.

1—*Castor canadensis* Kuhl. **Beaver.**

Beaver were greatly reduced in numbers in northern Saskatchewan by 1944. There were still quite healthy populations in some of the southern areas. Beginning in 1947 and continuing for several years, beaver were live-trapped in various areas throughout the south and transported by truck and aircraft to northern areas. As a result of this wide-spread transplanting, difficulties will be met in determining subspecies by type locality for the southern forms may now be found almost anywhere in the province. Today beaver are everywhere in the province where there is an adequate water and food supply.

Two subspecies are known to occur in Saskatchewan:

a) *Castor canadensis canadensis* Kuhl.

Total length, 1080-1150 mm.; tail vertebrae, 400-408 mm.; hind foot, 175-195 mm.; upperparts rich dark brown, tinged with chestnut brown; head brighter; underparts somewhat lighter in tone and lacking chestnut tinge.

Reported from Estevan (Soper '46); Prince Albert National Park (Soper '52).

b) *Castor canadensis missouriensis* Bailey.

Originally found in the southwestern part of the province.

Total length, 900-1050 mm.; tail vertebrae, 270-340 mm.; hind foot, 170-180 mm.; upperparts bright hazel brown; underparts smoky gray; somewhat smaller than typical *canadensis*, paler and duller brown.

Reported from Battle Creek (Anderson '47; Soper '46); Frenchman River northwest of Val Marie (Soper '46); Lonesome Butte (Anderson '47).



● *Castor canadensis*

Family 5: CRICETIDAE

Form typically rat- or mouse-like.

Key to Sub-families of CRICETIDAE

- | | |
|--|------------|
| Ears and eyes large, conspicuous | Cricetinae |
| Ears and eyes small, inconspicuous | Microtinae |

Sub-family 1: Cricetinae

Key to Saskatchewan Genera of CRICETINAE
(Adapted from Rand, 1948)

- | | |
|--|-------------------|
| 1. Total length over 300 mm.; tail bushy | <i>Neotoma</i> |
| Total length less than 200 mm.; tail not bushy | 2 |
| 2. Tail about twice length of hind foot; soles of feet with four plantar tubercles | <i>Onychomys</i> |
| Tail about three times length of hind foot; soles of feet with five or six plantar tubercles (Fig. 15) | <i>Peromyscus</i> |



15.

FIG. 15: Plantar tubercles on foot of *Peromyscus maniculatus*.

Genus: *Onychomys* Baird.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

1—*Onychomys leucogaster* (Wied)
Northern Grasshopper Mouse.

These rodents are probably thinly dispersed and seem to have a highly

localized occurrence in the southern part of the province.

Saskatchewan specimens are referable to *Onychomys leucogaster missouriensis* (Audubon and Bachman).

Total length, 120-142 mm.; tail vertebrae, 31-37 mm.; hind foot, 19-

21 mm.; upperparts grizzled gray; underparts white.

Reported from Carlton, Dundurn (Miller and Kellogg '55; ROM); Cypress Hills (Soper '46; ROM); east of Frenchman River, Osler, Weyburn, Wood Mountain (Miller and Kellogg '55); Indian Head (Anderson '47; Soper '46; Miller and Kellogg '55; ROM); Kendal, Val Marie (Soper '46); Last Mountain Lake (Anderson '47; Miller and Kellogg '55); Touchwood Hills (Höllis '02); Asquith, Big Muddy, Grandora, Tregarva (SMNH); Ceylon, Rockglen (U. of S.).

Genus: *Peromyscus* Gloger.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.



● *Onychomys leucogaster*

Key to Saskatchewan Species of *Peromyscus*

- Tail very sharply bicolor; palatine slits longer, parallel-sided (Fig. 16) *P. maniculatus*
Tail not sharply bicolor; palatine slits shorter, not parallel-sided *P. leucopus*

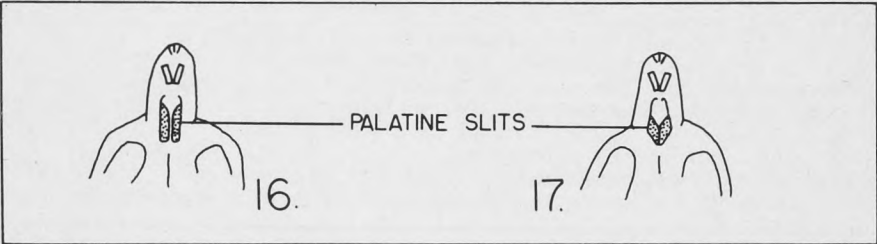


FIG. 16: Palatine slits of *Peromyscus maniculatus*; FIG. 17: Palatine slits of *Peromyscus leucopus*.

2—*Peromyscus maniculatus* (Wagner) **Deer Mouse.**

This is the most common mouse in the province. It is rarely that a trap-line fails to yield at least one specimen. There are numerous records of this species, but the races are still doubtful as intergrading occurs.

Specimens in the University of Saskatchewan collection which have not been determined subspecifically, have been collected at Carlyle Lake*, High Hill, Indian Head*, Lac la Ronge, Ladder Lake*, Maple Creek*, Rockglen*, Saskatoon*.

Two subspecies are known to occur:

a) *Peromyscus maniculatus borealis* Mearns.

Occurs in the northern part of the province.

Total length, 150-175 mm.; tail vertebrae, 65-85 mm.; hind foot, 19-20 mm.; upperparts cinnamon, heavily sprinkled with gray; underparts creamy-white.

Reported from Prince Albert National Park (Soper '52); Carlton House, Dundurn, Emma Lake (ROM); Big River, Buffalo Narrows*, Fond-du-Lac, Lac la Ronge*, Lake Athabasca, Melfort, Wollaston Lake* (U. of S.).



● *Peromyscus maniculatus*

b) *Peromyscus maniculatus osgoodi* Mearns.

Occurs in south-central Saskatchewan.

Total length, 140-175 mm.; tail vertebrae, 54-73 mm.; hind foot, 19-20.4 mm. (Soper '46); resembles *borealis*, but paler and more ochraceous.

Reported from Battle and Middle Creeks, Cypress Lake, Eastend, Estevan, Fife Lake, Glen Ewen, along the Frenchman River to the International Boundary, Big Muddy Coulee and Lake, McDonald Lake, Rocky Creek (Soper '46); Touchwood Hills (Hollis '02, listed as *P. m. arcticus*); Cypress Hills, Indian Head, Lake Katepwa (ROM); Regina (ROM; U. of S.); Rockglen*, Saskatoon* (U. of S.).

3—*Peromyscus leucopus* (Rafinesque) **White-footed Mouse.**

Comparatively rare in southwestern Saskatchewan, where specimens are referable to *Peromyscus leucopus aridulus* Osgood.

Total length, 155-187 mm.; tail vertebrae, 62-85 mm.; hind foot, 20-21 mm. (Soper '46); upperparts ochraceous-buff, lightly sprinkled with gray; underparts creamy-white.

Reported from Big Muddy Lake, Rocky Creek (Soper '46); Eastend (Anderson '47; Soper '46); Lonesome Butte (Anderson '47); Mortlach (SMNH).



● *Peromyscus leucopus*
△ *Neotoma cinerea*

Genus: *Neotoma* Say and Ord.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

4—*Neotoma cinerea* (Ord) **Bushy-tailed Wood Rat.**

Saskatchewan specimens are referable to *Neotoma cinerea cinerea* (Ord).

Total length, 387 mm.; tail vertebrae, 162 mm.; hind foot, 43 mm. (Rand '48); upperparts grayish-buff to ochraceous-buff; underparts white.

The only specimen recorded for Saskatchewan was taken at Govenlock (Nero, 1956b).

Sub-family 2: Microtinae

Key to Saskatchewan Genera and Species of MICROTINAE
(Adapted from Rand, 1948)

- | | |
|---|--------------------------------|
| 1. Size large, total length over 400 mm.; tail laterally compressed into a rudder | <i>Ondatra zibethicus</i> |
| Size smaller, total length less than 300 mm.; tail round, not laterally compressed | 2 |
| 2. Color usually reddish-brown or chestnut, occasionally occurs as dark "fusco-dorsalis" color phase; skull with posterior border of palate ending in a thin bony shelf | <i>Clethrionomys gapperi</i> |
| Color blackish- or grayish-brown; palate not as above | 3 |
| 3. Tail little, or no, longer than hind foot | 4 |
| Tail not less than 1½ times as long as hind foot..... | 5 |
| 4. Color light buffy-gray; upper incisors without grooves | <i>Lagurus curtatus</i> |
| Color dark grizzled brown; upper incisors with grooves | <i>Synaptomys borealis</i> |
| 5. Color grizzled black and gray, lacking distinct brownish tones | <i>Pedomys ochrogaster</i> |
| Color grizzled brownish | 6 |
| 6. Inner reentrant angles of the enamel of the lower molars much deeper than the outer angles (Fig. 18); nose yellowish | <i>Phenacomys ungava</i> |
| Inner and outer reentrant angles of lower molars approximately equal (Fig. 19); nose not yellowish | <i>Microtus pennsylvanicus</i> |

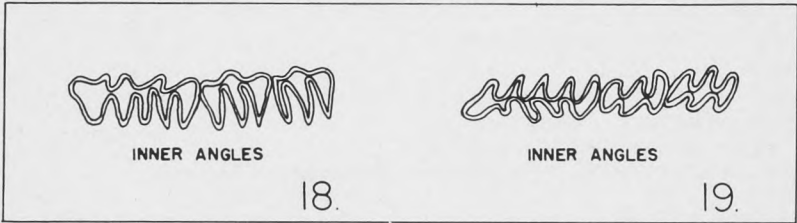


FIG. 18: Right lower molars of *Phenacomys ungava*, showing enamel pattern;
FIG. 19: Right lower molars of *Microtus pennsylvanicus*, showing enamel pattern.

Genus: *Synaptomys* Baird.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

5—*Synaptomys borealis* (Richardson). **Northern Bog Lemming.**

Rare in the wooded areas of the province. It may be distinguished by a shallow groove that is present on each upper incisor tooth.

Two subspecies are recognizable in Saskatchewan:

a) *Synaptomys borealis borealis* (Richardson).

Total length, 127-129 mm.; tail vertebrae, 24-26 mm.; hind foot, 18 mm.; upperparts a very rich, dark brown plentifully mixed with black-tipped hairs.

Reported from Brightsand Lake (Anderson '47).

b) *Synaptomys borealis smithi* Anderson and Rand.

Total length, 118-127 mm.; tail vertebrae, 23-24 mm.; hind foot, 17-19 mm.; color dark, dull brownish, heavily mixed with black; much duller than typical *borealis*.

Reported from Prince Albert National Park (Anderson and Rand '43c; Soper '52); Emma Lake, Waskesiu (ROM).

Genus: *Phenacomys* Merriam.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.



● *Synaptomys borealis*

6—*Phenacomys ungava* Merriam
Heather Vole.

Two subspecies are known to occur in Saskatchewan:

- a) *Phenacomys ungava mackenzii* Preble.

Total length, 138-142 mm.; tail vertebrae, 31-33 mm.; hind foot, 17 mm.; upperparts brown, darkest on rump, grayer on foreparts; face yellowish; underparts grayish-white; skull relatively wide.

Reported from Lake Athabasca (Anderson '47).

- b) *Phenacomys ungava soperi* Anderson.

Total length, 121-142 mm.; tail vertebrae, 30-33 mm.; hind foot, 17 mm. (Anderson '42); color similar to *mackenzii*, but dorsal region much duller and face paler ochraceous-tawny; skull relatively narrower.

Reported from Emma Lake (Anderson '42; Banfield '41; ROM);



△ *Phenacomys ungava*

● *Lagurus curtatus*

Prince Albert National Park (Soper '52).

Genus: *Clethrionomys* Tilesius.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

7—*Clethrionomys gapperi* (Vigors)
Gapper's Red-backed Mouse.

This species is common and widespread, being found almost everywhere there are trees. Two distinctive color phases are present in this species. The common one has a broad reddish dorsal band while the less common color phase has the red replaced with brown or blackish.

Specimens in the Saskatchewan Museum of Natural History, not determined subspecifically, have been collected at Carnduff, Craven, Foam Lake, Madge Lake, Marieton, Moose Mountain Park, Mortlach, Prince Albert, Ravenscrag, Tregarva, Valeport, and Wynyard. The University of Saskatchewan has representatives of the species from Borden, Carlyle Lake*, Lac la Ronge, Pike Lake, Saskatoon* and Yorkton.

Two subspecies are reported in the province:

- a) *Clethrionomys gapperi athabasca* (Preble).



● *Clethrionomys gapperi*

Occurs in the northern part of the province.

Total length, 144-146 mm.; tail vertebrae, 39-41 mm.; hind foot, 18 mm.; dorsal band from crown to base of tail bright chestnut or, in dark phase, the band is brown or blackish; face and sides buffy-gray; underparts white. The dark or "fusco-dorsalis" color phase is more common in the far north.

Reported from Prince Albert National Park (Soper '52, listed as *C. g. loringi*); Emma Lake, Waskesiu (ROM); Camsell Portage, Buffalo Narrows*, Carlyle Lake*, Lac la Ronge*, Reindeer Lake*, Pierce Lake, Wollaston Lake (U. of S.).

b) *Clethrionomys gapperi loringi* (Bailey).

Total length, 132-144 mm.; tail vertebrae, 35-41 mm.; hind foot, 17-20 mm.; smaller and more brightly colored, with grayer sides than *athabasca*; dark color phase is rare.

Reported from Battle Creek, East-end (Soper '46); Touchwood Hills (Hollis '02); Dundurn, Indian Head, Lake Katepwa, Mortlach (ROM); Cypress Hills (ROM; U. of S.); Regina*, Saskatoon (U. of S.).

Genus: *Microtus* Schrank.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

8—*Microtus pennsylvanicus* (Ord)
Meadow Vole.

Widespread, probably exceeded in abundance only by *Peromyscus*.

Two subspecies occur in the province:

a) *Microtus pennsylvanicus drummondii* (Audubon and Bachman).

Found in all of Saskatchewan, except the extreme southwestern part.

Total length, 135-162 mm.; tail vertebrae, 37-45 mm.; hind foot, 18-20 mm.; upperparts dark grizzled brown with black along sides; underparts gray with dusky tinge. Juveniles and subadults are darker than adults.



● *Microtus pennsylvanicus drummondii*
△ *Microtus pennsylvanicus insperatus*

Reported from Big Muddy Lake, Glen Ewen, McDonald Lake, Watrous (Rand '43a); Cypress Hills (Banfield '41); Emma Lake (Banfield '41; ROM); Indian Head (Rand '43a; ROM); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Waskesiu (ROM); Foam Lake (SMNH); Regina* (SMNH; U. of S.); Buffalo Narrows*, Fond-du-Lac, Lac la Ronge*, Melfort*, Saskatoon*, Wollaston Lake*, Yorkton (U. of S.).

b) *Microtus pennsylvanicus insperatus* (Allen).

In parts of extreme southwestern Saskatchewan.

Total length, 130-185 mm.; tail vertebrae, 36-48 mm.; hind foot, 19-21 mm.; upperparts buffy, sides grayer; underparts pale gray.

According to Soper (1946), "at many, if not most, points in this territory, it intergrades with *M. p. drummondii*."

Reported from Battle Creek (Rand '43a; Soper '46); Cypress Hills, Crane Lake, Eastend, Lonesome Butte, Val Marie (Rand '43a); Cypress Lake, Fife Lake, Frenchman River, Middle Creek, Rocky Creek (Soper '46).

Genus: *Pedomys* Baird.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

9—*Pedomys ochrogaster* (Wagner)
Prairie Vole.

The local form is *Pedomys ochrogaster minor* (Merriam).

Reportedly common in arid regions.

Total length, 110-147 mm.; tail vertebrae, 22-39 mm.; hind foot, 15-17.5 mm. (Soper '46); upperparts grizzled gray; underparts whitish to pale buffy.



● *Pedomys ochrogaster*

Reported from Big Muddy Lake, Glen Ewen, McDonald Lake (Soper '46); Dundurn (Banfield '41; ROM); Indian Head (Miller and Kellogg '55; ROM); Touchwood Hills (Hollis '02); Regina (ROM); Carlyle Lake* (U. of S.).

Genus: *Lagurus* Gloger.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

10—*Lagurus curtatus* (Cope)

Sagebrush Vole.

Specimens in Saskatchewan are referable to *Lagurus curtatus palidus* (Merriam).

Found in southwestern Saskatchewan where it is restricted to local areas of sagebrush and short grass.

Total length, 103-135 mm.; tail vertebrae, 17-27 mm.; hind foot, 17-19.5 mm. (Soper '46); upperparts pale buffy-gray; underparts whitish.

Reported from Battle Creek, Big Muddy Coulee and Lake, Cypress Lake, Eastend, Fife Lake, Frenchman River, Middle Creek, Rocky Creek (Soper '31, '46); Val Marie (Anderson '47; SMNH).

Genus: *Ondatra* Link.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

11—*Ondatra zibethicus* (Linnaeus)
Muskrat.

Common in suitable marshy areas throughout the province.

Two subspecies are known to occur in Saskatchewan, and a third probably occurs:

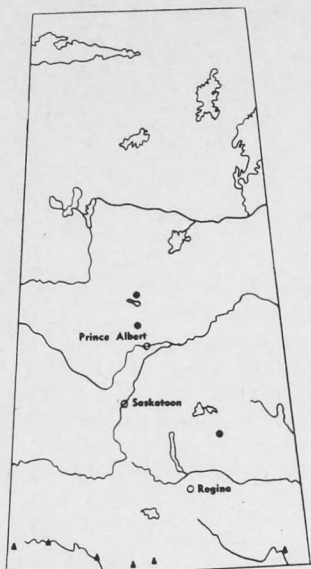
a) *Ondatra zibethicus albus* (Sabbine).

Type locality is Cumberland House. It is found in waters draining into Hudson Bay from the west, hence in eastern Saskatchewan.

Total length, 540-555 mm.; tail vertebrae, 260-264 mm.; hind foot, 70 mm.; back dark brown, slightly darker on head; sides chestnut; underparts like pelage of sides, but somewhat lighter in appearance.

Reported from Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02); Emma Lake (ROM).

b) *Ondatra zibethicus cinnamominus* (Hollister).



- △ *Ondatra zibethicus cinnamominus*
 ● *Ondatra zibethicus albus*

Found in southern Saskatchewan.

Total length, 460-595 mm.; tail vertebrae, 215-270 mm.; hind foot, 70-76 mm.; paler than *albus*, with cinnamon-brown underparts.

Reported from Battle Creek, East-end, Fife Lake, Glen Ewen, Rocky Creek, Val Marie (Soper '46).

- c) *Ondatra zibethicus spatulatus* (Osgood).

Anderson (1947) states that the range probably extends into north-western Saskatchewan.

Total length, 530 mm.; tail vertebrae, 232 mm.; hind foot, 74.5 mm. (Rand '48); back glossy brown; sides russet; underparts whitish with a cinnamon wash.

Family 6: MURIDAE

Form slender; tail long, scaly, and scantily haired.

Key to Saskatchewan Genera and Species of MURIDAE

Total length 185 mm. or less *Mus musculus*
 Total length 400 mm. or more *Rattus norvegicus*

Genus: *Rattus* Fischer.

Dentition: I 1/1, C 0/0, PM 0/0,
 M 3/3 = 16.

1—*Rattus norvegicus* (Berkenhout)
Norway Rat.

An introduced species now common around garbage dumps, restaurants, grain elevators, creameries, and farm buildings.

Total length, 400 mm.; tail vertebrae, 200 mm.; hind foot, 45 mm. (Anderson and Rand '43a).

Reported from Prince Albert National Park (Soper '52); Saskatoon (Banfield '41; U. of S.); Hearne, Milestone, Regina, Tregarva, Wapella (SMNH).



- *Rattus norvegicus*

Genus: *Mus* Linnaeus.

Dentition: I 1/1, C 0/0, PM 0/0, M 3/3 = 16.

2—*Mus musculus* Linnaeus

House Mouse.

An introduced species prevalent in all parts of southern and central Saskatchewan where there are human habitations.

Specimens are referable to *Mus musculus domesticus* Rutt.

Total length, 167 mm.; tail vertebrae, 82 mm.; hind foot, 18 mm. (Anderson and Rand '43a).

Reported from Val Marie (Banfield '41); Arm River, Lorie, Milestone, Regina, Regina Beach, Tregarva, Valeport (SMNH); Saskatoon, Indian Head, Plunkett* (U. of S.).



● *Mus musculus*

Family 7: ZAPODIDAE

Form small, mouse-like; hind legs and tail very long; forelegs short.

Genus: *Zapus* Coues.

Dentition: I 1/1, C 0/0, PM 1/0, M 3/3 = 18.

Key to Saskatchewan Species of *Zapus*

Skull light and slender; incisive foramen small *Z. hudsonius*
 Skull robust; incisive foramen large *Z. princeps*

1—*Zapus hudsonius* (Zimmerman)
Meadow Jumping Mouse.

One subspecies has been reported for the province, and a second may occur:

a) *Zapus hudsonius hudsonius* (Zimmerman).

Total length, 205-224 mm.; tail vertebrae, 119-138 mm.; hind foot, 29-31 mm.; upperparts mixed yellowish-fawn and black with a dorsal band extending from crown to base of tail; underparts creamy-white.

Reported from Emma Lake (Banfield '41, listed as *Z. p. minor*; Krutzsch '54; ROM); Prince Albert National Park (Soper '52); Touchwood Hills (Hollis '02, listed as *Z. h. campestris*?); Buffalo Narrows*, Reindeer Lake (U. of S.).

b) *Zapus hudsonius intermedius* Krutzsch.

May occur in the extreme southeastern part of the province.



● *Zapus hudsonius*
 △ *Zapus princeps*

2—*Zapus princeps* Allen
Western Jumping Mouse.



Western Jumping Mouse

Photo by R. W. Fyfe
 Sas. Museum of Natural History

Saskatchewan specimens are referable to *Zapus princeps minor* Preble.

The type locality is Wingard, near Carlton. It occurs in central and southern Saskatchewan.

Total length, 218-220 mm.; tail vertebrae, 129-131 mm.; hind foot, 29-30 mm.; upperparts yellowish-brown; dorsal band with heavy admixture of black; underparts tinged with salmon.

Reported from Battle Creek, Big Muddy Coulee, Cypress Lake, Rocky Creek (Soper '46); Dundurn (Banfield '41); Wynyard (SMNH); Boggy Creek*, Cypress Hills Park* (U. of S.). The writer has also taken specimens at Tessier.

Family 8: ERETHIZONTIDAE

Large, robust rodents; long stiff spines or quills in pelage; fore foot with four toes, hind foot with five. Genus: *Erethizon* Cuvier.

Dentition: I 1/1, C 0/0, PM 1/1, M 3/3 = 20.

1—*Erethizon dorsatum* (Linnaeus)
Porcupine.

Fairly common in most of the wooded areas of the province.

Three subspecies have been reported for Saskatchewan:

a) *Erethizon dorsatum dorsatum* (Linnaeus).

Found in the northern part of the province.

Total length, 675-800 mm.; tail vertebrae, 175-260 mm.; hind foot,

86-110 mm.; dorsal pelage thickly mixed with barbed spines; color black or brownish with a small amount of yellowish or whitish tipping of the guard hairs on nape, hip region, and tail.



● *Erethizon dorsatum*

Reported from Prince Albert National Park (Soper '52).

b) *Erethizon dorsatum bruneri* Swenk.

Anderson (1947) reports that specimens from southern Saskatchewan (Lonesome Butte) indicate that *bruneri*, at least as an intergrade, is recognizable.

Larger than *epixanthum*, hind feet shorter, color paler and duller.

c) *Erethizon dorsatum epixanthum* Brandt

Occurs in the Cypress Hills area of southwestern Saskatchewan, probably as an intergrade with *E. d. bruneri* (Anderson, 1947).

Total length, 765-790 mm.; tail vertebrae, 205-220 mm.; hind foot, 100-120 mm.; (Anderson and Rand '43b); similar to typical *dorsatum*, but tipping of guard hairs greenish-yellow rather than yellowish or whitish.

Order: ARTIODACTYLA

Key to Saskatchewan Families of ARTIODACTYLA

- 1. Antlers of solid bone covered with velvet during growth, shed annually Cervidae
- Horn-like ornaments on the head not covered with velvet during growth 2
- 2. Bony horn cores covered with branched sheath which is shed annually; only one pair of hooved toes, no lateral rudimentary hooves Antilocapridae
- Bony horn core covered with unbranched horny sheath, not shed Bovidae

Family 1: CERVIDAE

Key to Saskatchewan Genera of CERVIDAE

- 1. Antlers cylindrical, not palmate 2
- Antlers more or less flattened 3
- 2. Upper canines present; antlers directed backwards, the prongs forward Cervus
- Upper canines absent; antlers directed forwards, the prongs upwards. Odocoileus
- 3. Males only with antlers; no antler prong extending downward over face Alces
- Both sexes with antlers; antler with prong extending downward over face Rangifer

Genus: Cervus Linnaeus.

Dentition: I 0/3, C 1/1, PM 3/3, M 3/3 = 34.

1—Cervus canadensis (Erxleben)
Elk, Wapiti.

Saskatchewan specimens are referable to Cervus canadensis manitobensis Millais.

Found within the commercial forest or mixed woods area of Saskatchewan.

Reported from Prince Albert National Park (Soper '52); Candle Lake (SMNH).

Genus: Odocoileus Rafinesque.



● Cervus canadensis



● Odocoileus hemionus

Dentition; I 0/3, C 0/1, PM 3/3, M 3/3 = 32.

2—*Odocoileus hemionus* (Rafinesque) **Mule Deer.**

Saskatchewan specimens are referable to *Odocoileus hemionus hemionus* (Rafinesque).

Reported from Prince Albert National Park (Banfield '41; Soper '52); Big Muddy Coulee and Lake, Moose Mountain, Rocky Creek, Val Marie, Wood Mountain (Soper '46); Craven, Hudson Bay (SMNH).



● *Odocoileus virginianus*

3—*Odocoileus virginianus* (Zimmermann) **White-tailed Deer.**

Occurs in southern and central Saskatchewan, where specimens are referable to *Odocoileus virginianus dacotensis* Goldman and Kellogg.

Reported from Prince Albert National Park (Soper '52); Bulyea, Craven, Langbank, McLean, Regina (SMNH).

Genus: *Alces* Gray.

Dentition: I 0/3, C 0/1, PM 3/3, M 3/3 = 32.

4—*Alces alces* (Linnaeus) **Moose.**

Saskatchewan specimens are referable to: *Alces alces andersoni* Peterson.

Found from Duck Mountain Park and across the province in a north-westerly direction to Lake Athabasca.



● *Alces alces*

Reported from Harper Lake (Peterson '52, '55); Eldersley (Peterson '55); Moose Mountain (Soper '46); Prince Albert National Park (Soper '42); Candle Lake, Connel Creek, Hudson Bay (SMNH).

Genus: *Rangifer* (Smith).

Dentition: I 0/3, C 0/1, PM 3/3, M 3/3 = 32.

5—*Rangifer arcticus* (Richardson) **Barren Ground Caribou.**

Saskatchewan specimens are referable to *Rangifer arcticus arcticus* (Richardson).

"In Saskatchewan, the winter range extends from the northern shore of Lake Athabasca southward, including Black and Wollaston Lakes, the southern tip of Reindeer Lake, the Foster Lakes, Cree Lake and the upper Clearwater River" (Banfield, 1954).

The Saskatchewan Museum of Natural History has specimens collected at Cree Lake and Reindeer Lake.

6—*Rangifer caribou* (Gmelin) **Woodland Caribou.**

Saskatchewan specimens are referable to *Rangifer caribou sylvestris* (Richardson).



- *Rangifer arcticus*
- △ *Rangifer caribou*

Known to range as far south as Leaf Lake near Hudson Bay. They are generally considered not to range extensively north of the Churchill River system, although there are some exceptions.

A specimen in the Saskatchewan Museum of Natural History was collected at Meadow Lake.

Family 2: ANTILOCAPRIDAE
Genus: *Antilocapra* Ord.
Dentition: I 0/3, C 0/1, PM 3/3, M 3/3 = 32.

- 1—*Antilocapra americana* (Ord)
Pronghorn.

Antilocapra americana americana (Ord) occurs in the southwestern part of the province. Fuller (1944) reports that "in Val Marie, Climax and Govenlock districts almost every

farmer has an 'antelope gun' of some description, but the animals are well protected by a very short open season." Benson (1957) reports that the antelope kill in Saskatchewan for 1955 was 2,025.



- *Antilocapra americana*

The Saskatchewan Museum of Natural History has specimens collected at Abbey, Davidson, Govenlock, and Kyle.

Family 3: BOVIDAE
Genus: *Bison* Hamilton-Smith.
Dentition: I 0/3, C 0/1, PM 3/3, M 3/3 = 32.

- 1—*Bison bison* (Linnaeus) **Bison.**
Bison bison bison (Linnaeus) was the form that occurred.
No longer exists in a wild state, being confined to enclosed preserves and parks. The Royal Ontario Museum possesses a skeleton from a bog near Dundurn.

Collecting Mammals

Most small mammals can be collected by the snap-type mouse or rat traps. A suitable bait for these traps consists of a mixture of rolled oats and chopped raisins moistened with peanut butter to the consistency of putty.

Three measurements should be taken of every mammal captured. The first of these is total length — the distance in a straight line from the tip of the nose-pad to the end of the last tail vertebra, excluding hairs that project beyond tip. The second measurement taken is the length of the tail — the distance from the base of tail to the tip of the last vertebra, excluding hairs that project beyond tip. The third measurement is the length of the hind foot — the distance from the tip of longest claw to end of heel bone. The measurements are taken in millimeters.

The measurements should be recorded in a bound book. Each specimen collected should be entered in this book and numbered consecutively. This number is known as the catalogue number. Besides the measurements, the following information should be entered: date, locality, type of habitat in which collection was made, sex of specimen, breeding condition, name of collector, and any other available information regarding the specimen.

The preparation of a study skin of a small mammal is not difficult.

The first step, after measurements are taken, is to make an incision through the skin, but if possible not through the body wall, on the midline of the belly from immediately in front of the anus forward one fourth of the distance toward the chest. Cornmeal or fine sawdust should be sprinkled on the cut area to absorb blood or body fluid that may be present.

Separate the skin from the abdominal wall on each side of the slit, and then thrust the knee toward the midline. Grasp the exposed knee and push the skin back to the ankle. Cut the leg bone immediately below the

knee joint, covering the cut areas with cornmeal or sawdust. Strip the flesh of the leg from the cut end to the ankle. When both legs have been freed from the body, loosen the skin around the entire circumference of the body, and cut the skin loose from the gut and genital ducts. Cover the area with cornmeal or sawdust. Next loosen the skin about the base of the tail, place three fingers behind the skin and push it off the tail.

When the skin is free from the tail and hind legs, turn the skin down all around the body and push it off the body until the animal's elbows are in sight. Push the skin on the foreleg down to the wrist. Sever the leg bone immediately below the elbow, and cover the cut areas with cornmeal or sawdust. Strip the flesh off the bone from the cut area to the wrist. When both legs have been freed, push the skin farther until the bases of the ears come into view. Grasp the ear tube on two sides and pull it free from the skull. When both ear tubes are free, push the skin forward until the eyes are reached. Using a scalpel or razor blade cut through the membrane attached to the eyelids, being careful not to cut the eyelid itself.

Push the skin to the tip of the lower jaw. Cut around the lips close to the skull at the inner edge of the gums. Free the nose by cutting through the cartilage near the tip.

Remove any flesh that may still be adhering to the skin. Using needle and thread, the lips may be brought together with a few stitches. Wrap the leg bones with wisps of cotton to replace the flesh previously removed from them.

Make a firm body of about the same size and shape as the carcass by rolling up a square of cotton and shaping it with the fingers. Invert the skin over this body. Insert a piece of thin wire wrapped with cotton into the tail. Sew up the incision.

In order to dry properly, the skin should be pinned out on a board as indicated in Figure 20.

More detailed information on collecting and preparing small mammals is available in Rudolph M. Anderson's *Methods of Collecting and Preserving Vertebrate Animals*, which can be obtained from the National Museum of Canada, Ottawa, Ontario, for fifty cents.

There is need of a great deal more data regarding Saskatchewan mammals. Both the Saskatchewan Museum of Natural History and the University of Saskatchewan welcome any additional information which readers can supply.

Anyone wishing to have mammal specimens identified, or to have identifications checked, may send them to either:

Sask. Museum of Natural History,
Wascana Park,
REGINA, Sask.

or
Biology Department,
University of Saskatchewan,
SASKATOON, Sask.

Specimens sent in should be preserved—either as study skins or in a solution of 10% formalin or 85% alcohol, and carefully packed to prevent damage in transit. They should be accompanied with any pertinent data available, such as date collected, locality, habitat, etc.

Unless the sender requests that the specimens be returned, they will be retained by the institution to which they were sent, and grateful acknowledgement will be made.

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